The Builder.

VOL. XVI.—No. 787.

Murdering the Soldier.—Portman-street Barracks.—The Commissioners' Report.

GREAT are the sacrifices made at the altar of Ignorance: 140,000 persons in England, says the Registrar-general, in his last quarterly return, die before their time,—die unnaturally: "280,000 are constantly suffering from actual diseases which do not prevail in healthy places; their strength is impaired in a thousand ways: their affections and intellects are disturbed, deranged, and diminished by the same agencies." And yet (mark this), twice as many soldiers at home die every year as would be the case if the rate of mortality amongst them were *only* as great as amongst the general population. The general population die long before their time, but our soldiers, trained at great cost, are killed off, when they are at home at ease, more than twice as fast as the members of unwholesome trades; such, for example, as night printers. Compared with the members of friendly societies in agricultural districts, says the recent report of the commissioners appointed to inquire into the regulations affecting the sanitary condition of the army, the mortality of the Guards is three times and one-third greater; in other words, while there are six deaths and a little more per annum in 1,000 members of friendly societies, there are twenty deaths and a little more in 1,000 of the Guards! The principal agent is disease of the respiratory organs, and the leading cause of this disease is overcrowding in ill-ventilated and, often, ill-arranged and ill-drained barracks. Here we come back to the old story,—the story we have told so oft,—the story which the world listens to, and, shrugging its shoulders, still disbelieves. Men must have pure air. Feed them, clothe them, protect them from the weather,—still, without a proper quantity of fresh air, all is of no avail, and they rot and rot, and drop and drop.

When an English gentleman has reared and trained a pack of dogs, or a lot of race-horses, he takes care they shall have a kennel or a stable, as the case may be, wherein they will get this pure air, and have all other circumstances in favour of their complete development. When the English nation, at much larger expense, has produced a body of trained soldiers—soldiers, with souls, by the way, which the dogs and the horses have not—it might be supposed the governors of the nation would, at any rate, take the same pains. So far from this being the case, the men are placed under conditions infinitely worse than if they had been left in their native hovels or garrets, and are absolutely killed off, as was said just now, twice as quickly as they ought to be, and that without the interposition of any foreign enemy The rooms are very confined, the beds are packed in close together, the windows are insufficient and ill-placed; where there are ventilators they are so actively offensive, that the men risk the unfelt danger and stop them, and thus the soldier sleeps in poison, and dies in consequence.

Even in the most recently erected barracks in the metropolis the arrangements are anything but efficient. We have found the air, in the staircases, passages, and some of the rooms in the new buildings put up for soldiers within the walls of the Tower of London, more stagnant and offensive than in any London prison that we ever went into.

The report of the commissioners contains a mass of useful information, and numerous important recommendations on the subject, which ought to be made widely known. No one seems to recollect that *every* point noted by the commission was considered by the competitors in the plans exhibited at Burlington House,—which plans, instead of being turned to account, are just as waste paper. We do not allude merely to the "successful" designs. There was a mass of useful information in the whole, which was thoroughly wasted. And as to the statement that no new buildings have been commenced since the date of that competition, we are very much disposed to think it is next door to a falsehood. Government should, even now, gather together the various drawings and specifications, and publish the whole, and thus the competition would be made useful, as it should be, to the country and the competitors.

The report now issued reiterates all that we have said on the arrangements of hospitals, recommending the plan of separate pavilions, with windows on opposite sides, and natural ventilation; and confirms the objections we were forced to make to the proposed arrangement of the great hospital at Netley. A digest of it would afford matter for many articles. Leaving the report, however, for the present, we prefer to look for ourselves at one or two of the London barracks, and, following our old plan, to appeal to the eye as well as the understanding of our readers, by means of the pencil.

The *Portman-street Barracks* will serve the purpose. But for the small boys and patient maidens loitering round the entrance on the east side of the street, it might be supposed to lead to stables or a builder's yard, yet here accommodation is provided for about 500 of our best troops. Built more than a century ago for cavalry soldiers, it is said, it is now occupied by part of the 1st battalion of fusileer guards, many of the men being in the apartments originally intended for the horses. On the north and south sides of a paved parallelogram are the soldiers' dwellings; on the west are the officers' rooms; and, on the east, a large building, which was formerly a riding-school, but is now used as a cooking and dining room. With the exception of the place last mentioned, the buildings are two stories high, and the most striking feature is the small amount of window-opening. In the square are several pumps, which formerly supplied the soldiers with water from wells. These are now little used, and large cisterns, sufficient for the purpose, have been erected, which are filled by the ordinary water service.

On entering one of the dwelling-rooms of the men, which are nearly all alike, we find on the ground-floor a scene which, in some measure, resembles the drawing, fig. 1. on the next page. The sketch was made when the soldiers were away at dinner, and does not give an idea of the crowded appearance of the place when from twenty to twenty-two men are assembled in it. In the ceiling of the apartment are four small openings to square wooden shafts, passing from the ceiling through the room above to a cowl on the roof. The small window at the further end of the apartment is, like many of the others, within a few feet of neighbouring houses, and affords but a gloomy light, which is not much eclipsed by that from the window in the front. With both these aids the place is far too dark for either health or cleanliness. The iron bedsteads are arranged two and two, close together, and between each two there is a space of not more than a couple of feet. As regards the ventilating-holes in the ceiling, they are not covered by perforated zinc, nor have any means been used to distribute the air gradually through the apartments. It is not surprising, therefore, that the soldiers who sleep near these holes say that they are seldom without a bad cold. One man here was so hoarse that he could scarcely speak, and others were not much better. The result doubtless is that, to avoid this evil, an old jacket is made to provide a remedy, and, at the same time, to deprive the occupants of the rooms of all means of ventilation except the chimney opening, and this, in some instances, has been contracted until it is not larger than that of a small room in an ordinary dwelling, because of the smoke. More than one soldier spoke of these barracks in summer as the "Black Hole of Calcutta," and no wonder. The doors and windows at the time of our visit were all closed, and such men as came in the way complained much of cold. They had just returned to the barracks after a long, brisk march, clothed in their thick scarlet coats, which were rapidly exchanged for their light undress, and in some of the rooms no coals, although it was after mid-day, were at hand to light their fires, which, when lighted, were too small for the purpose of warming a room with thin walls. The day was bitterly cold, and the complaints were tolerably loud.

We did not need to be told that when the room is occupied at night it requires strong nerves on the part of one who would put his nose into it. It seems extraordinary, remembering that there are medical officers attached, that such a state of things should be permitted to exist. Is it that they have a difficulty in making themselves heard by those whose business it is to remedy such evils, or does custom blunt observance? The number of occupants should, of course, be lessened, so long as the place is occupied at all for such a purpose, and then some improvements might be made by simple means. For example, instead of allowing the current from the shafts to descend on the sleeping soldier, a circular plate of metal suspended beneath the opening near to the ceiling would distribute it, and render it less dangerous. To make the shafts serve the purpose of *removing the vitiated atmosphere*, for which they were probably introduced, fresh air must be brought in elsewhere.

Colds are necessarily frequent, and to increase the number, the troops quartered here have been served with straw to re-fill their beds, which, more than one said, was "as wet as dirt." If in a garrison close to the court end of this great metropolis our soldiers are supplied with damp straw to fill their bed-ticks, we need not wonder that mistakes occur upon the battle-fields at distant places. The buildings are in a miserably bad state of repair. When water flows into the place in consequence of imperfections of the roof, it is necessary, before anything can be done, to report in certain quarters; and although the water may be dropping into the soldiers' beds (as it often does), or other bad circumstances occurring, it is seldom that any evil can be cured in less than three weeks.

In the upper room the roof is in two spans, the ventilation-shafts already mentioned passing through it. The supports at the intersection of the roofs are only 8 feet high. An intelligent non-commissioned officer, who had carefully calculated the amount of space, said that there were not more than 180 cubic feet of space for each man, and with this limited space (about a fourth of what it should be) no effective ventilation.*

* The appendix to the report gives 331 cubic feet as the space to each man in these barracks. Admit this, and it is but half enough for life.

STOWING AWAY THE SOLDIER.

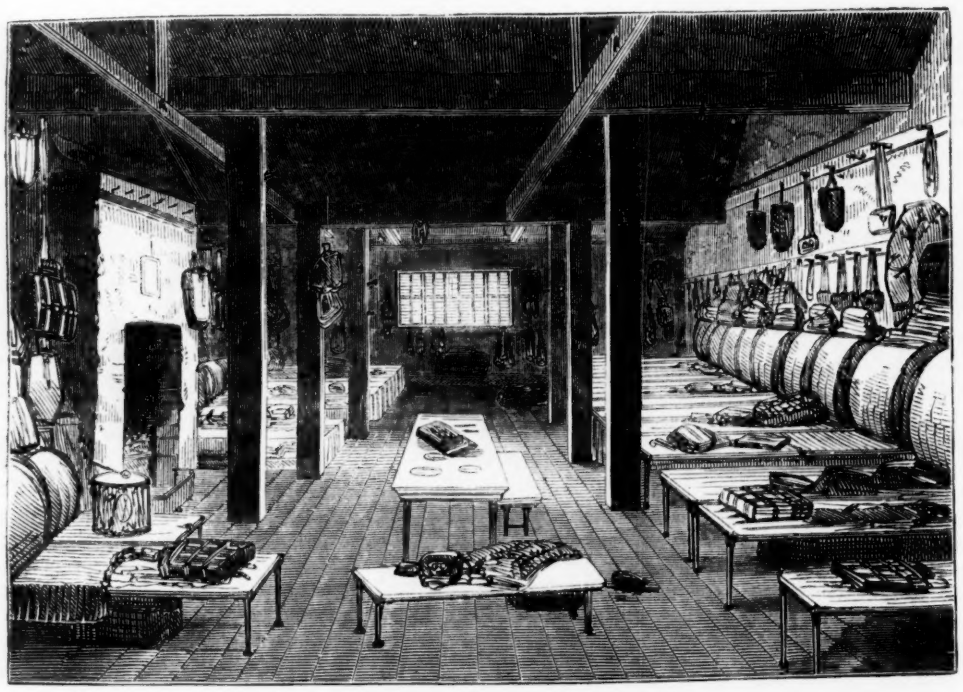

FIG. 2.—*Portman-street Barracks: Upper Room.*

FIG. 3.—*St. George's Barracks: the Reading-room.*

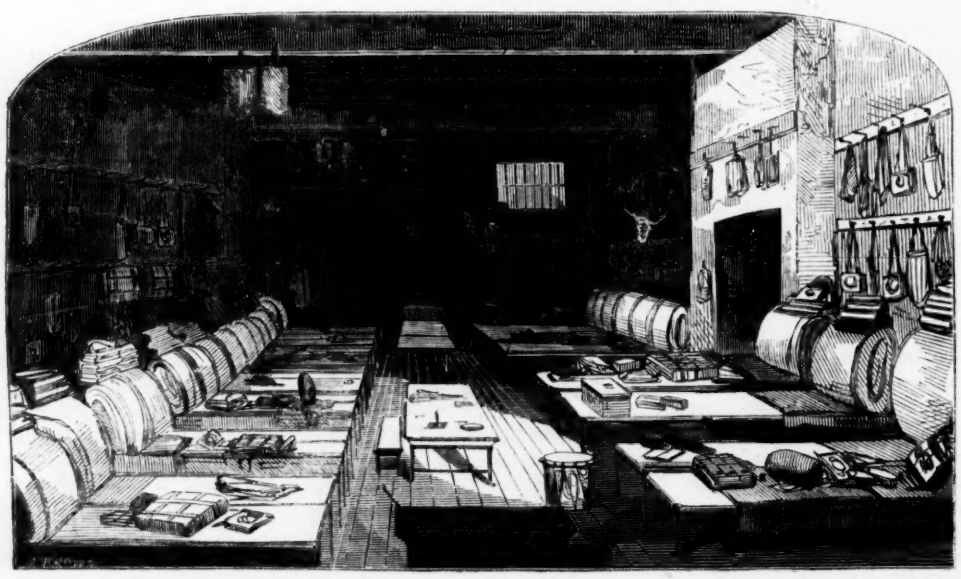

FIG. 1.—*Portman-street Barracks: Lower Room.*

Here was the same arrangement of windows, which fail sufficiently to illuminate the apartment. There was no fire in this room, the men saying that the allowance of coals for each room was so small that they were obliged to husband them. Our sketch, fig. 2, shows the sort of place it is for twenty-one men to eat, drink, and sleep in. The water from the centre part of the roof is carried through the troughs marked A, which, when choked, distil over on to the beds. B shows the ventilating shafts. The whole of the soldiers' apartments are so much alike, that it is not necessary to enter into further particulars.

The closets were in a very unwholesome state, and must endanger the sentinels who all the night stand by some of them;—even if the mischief stop there.

The troops here have the advantage of a very spacious dining-room, formerly the riding-school. Down the sides are ranges of seats, and, in the centre, tables, on which are placed the basins and plates, for the soldiers' dinner. At one end are two large boilers, and here

several persons were busily engaged cooking and cutting up the rations. With the exception of this apartment, anything more unsuitable for its purpose could not be well devised than are these barracks.

Before leaving the place, it should be mentioned that some of the living places provided for the married non-commissioned officers consist of a single room. The sergeant-major, for example, has a wife and four children, the eldest a great girl of fourteen, and all are forced to sleep in the same room, and that room, too, the one they live in. A drain passes underneath this apartment, and in summer renders it unbearable. Health cannot possibly be maintained under such circumstances. Truly, as Hood sings,—

> "Evil is wrought by want of head,
> As well as want of heart."

Married non-commission officers should be provided with a living and sleeping room: moreover, the damp condition of some of these dwellings, which is disgraceful, should be remedied. It is said, however, when these matters are remarked upon, that "the barracks have been condemned for the last five and thirty years, so that it is useless to talk about improving them." And all this time our soldiers have been kept in a place and under conditions where healthful life is impossible. The existence of hundreds has been shortened, and the health of all damaged. Mere overcrowding, under otherwise good circumstances, produces enervation, disease, and death. An illustration is afforded by M. Boudin, in the "*Annales d'Hygiène Publique*," quoted by Dr. Balfour, which it may be worth while to state briefly, although it is discreditable to the age that any fresh instances should be needed. M. Boudin found that every year, from 1843 to 1847, about the month of October, there was a murderous epidemic of typhoid fever in the military hospital at Versailles, exclusively among the sick soldiers who came from the garrison of St. Cloud. It was the more remarkable, inasmuch as it always showed itself about a week after the arrival of the then king at St. Cloud. What could be the cause of it? It never attacked the civil population, the officers, nor even the lower officers, though the latter occupied the same barracks as the soldiers who were attacked. The cause was simply overcrowding. Ordinarily the garrison consisted of 400 or 500 men, and had scarcely any sick. When the king came the number was increased to 1,200; the men were closely packed in small ill-ventilated chambers, and were soon prostrated by fever, from which the non-commissioned officers, better fed, less fatigued, and never sleeping more than two in one room, altogether escaped!

Vitiated air is the cause of two-thirds of the pulmonary diseases which desolate England. Fresh air gives the only chance of cure in their early stage. "It was formerly the practice," says Dr. Cotton, in his work on Consumption, "to 'shut up,' as it was called, 'for the winter,' the consumptive sufferer, and thus deprive him of one of his main chances of combating the disease. From the moment that a patient is confined to one room, from which fresh air is studiously excluded, all hope of improvement is at an end!" When twenty-one men are shut up, night after night, in a single room, from which fresh air is studiously excluded, and a variety of other circumstances are made to aid in the result, who need wonder that they die off twice as fast as members of the most unhealthy trades outside, although these are themselves killed, as the Registrar General proves, many years before their time?

Next week we shall look at St. George's Barracks and those at Knightsbridge. From the former we give a sketch shewing the "reading-room," or, rather we should call it, the reading *without* room. In the meanwhile let us say with Mr. Sidney Herbert,—"Nothing is more costly to the public than the annual loss of men from ill-health and mortality;" and though the saving which would result from a better system be indirect, and therefore difficult to estimate, yet we feel satisfied, looking at the question as a matter of finance alone, that money judiciously laid out in promoting the health and comfort of the soldier will make an ample return to the public.

MR. SYDNEY SMIRKE'S SECOND LECTURE ON ARCHITECTURE AT THE ROYAL ACADEMY.*

LET me detain you for a few minutes, while I repeat some common truths respecting colour. It is found that when, of the three primary colours, red, blue, and yellow, any one of them is placed near to a compound of the other two, a pleasing effect is produced which is called harmony.

To produce fully this effect, you will understand that it is necessary that these two colours,—viz. the primary, and the compound or secondary,—should be seen nearly together, or simultaneously, just as when a chord is struck in music.

These colours are, in the language of art, said to be complemental to that primary which does not enter into their own composition. Thus green is complemental to red, orange to blue, and so on. Such is perfect harmony in colour.

What is called discord in colours can only be produced, in its strictest sense, by placing in juxta position two of the compound colours. Thus a positive purple and a positive orange, placed in contact, produce a direct discord; but as each of these last-named compound colours contains a primary which is common to both, namely red, the nearer the purple approaches to its component blue, the less directly is it discordant with the orange; and when it has so far advanced as to be capable of being regarded as merely a purplish blue, it has so far attained to the relation of a positive harmony; so, on the other hand, as the purple approaches nearer to red, its discordance with the orange becomes weaker, until, arriving at merely purplish red, its relations to the orange have so far improved that, although not in strict harmony, it becomes at peace with it. Thus it follows that, whenever a primary colour is used, no positive discord can take place; for whichever of the three compound colours be used with it, it must either be in harmony or in peaceful relation with it.

Thus far all is pretty simple and obvious. When, however, a third colour has to be used, great caution becomes necessary. Should you, for example, have succeeded in bringing a purple and an orange together without offence to the eye, by giving to the orange a yellow tendency, mischief would inevitably ensue from the intrusion of a positive yellow; for you would then, by the contrast, throw the orangeish yellow back again in the scale towards the orange, and thus, as it were, renew the feud between the two colours. On the other hand, if, in proceeding to interpose upon the purple and orangeish yellow a third colour, you were to use a red, you would do little or no harm, for this third colour, red, whilst not at variance with the purple, would bring out the yellow tendency of the orange by obscuring, as it were, the red element of orange, and so far improve the relations with the purple, the direct complemental of yellow. Thus, for example, in an apartment wherein the prevailing hues of its furniture and decorations are modifications of a cool purple, orange yellow, and red, the arrangement of colour would be more sure of a favourable result than purple, orange yellow, and blue; for, in that latter case, the blue would, by contrast, bring out in greater force the orange element, and so aggravate the discord between it and purple. I might of course bring similar illustrations from the combination of the other primary and secondary colours, but enough, I apprehend, has been said to explain my meaning.

I should remind you that, in referring to these secondary colours, I have, for simplicity's sake, used the strong, definite terms orange, purple, and green; but the same general principles necessarily extend to all those numberless and nameless modifications of hues with which, in decorative painting, we have to deal, the discord or the harmony being, however, always the more decided the purer and more intense the colours are.

Artists, however, are a peace-loving fraternity, and have contrived a thousand ways of counteracting the conflict of hues. By the mere intermixture of black or white in their pigments, they alone produce a host of broken tints, slate-colours, buffs, greys, drabs, and many other such, whereby the neutralization may be carried so far as to produce complete pacification, although, of course, at the risk of insipidity; of which, however, there need not necessarily be any danger, for there are many licences permitted, and constantly practised by those of highest authority, in order to give animation and variety to the association. Those who instruct us in our moral duties tell us, and tell us most truly, that it is not only positive crime or sin that we have to shun, but every, the remotest, approach to it; and that the earliest indications of an evil principle have to be strenuously resisted: "*Non bene ripis creditur.*"

It is far otherwise in the colourist's code of morals. The judicious introduction of a moderate discord will occasionally be not only pardonable, but productive of very happy effects. I believe it to be so in musical composition, but certainly in the matter before us, to know when and to what extent the rigid laws of colour are to be violated with impunity, or indeed with advantage, is a nicety especially deserving your study.

Besides the contrast of hues, there are other cognate considerations by no means to be overlooked. A knowledge of the contrast of what is called tone, requires your careful cultivation, for variety in the depths of your colour is essential, in order to give them all the beauty of which they are susceptible. If all the colours in an apartment are alike strong, the effect will be sure to be harsh and violent: if, on the other hand you keep them all alike faint, the effect will most probably be insipid and washy. In a room so coloured, it is surprising, indeed, how much sparkling animation results from adding even a few lines or touches of strong colour. To borrow a well-known illustration from the experience of our sister art, these touches of strong colour, are analogous to the red cloak in a grey landscape.

Then there is the contrast of warm and cold hues, which particularly demands your study. Red and yellow are the two warm primaries; blue the cold one. Blue, as it advances towards yellow on the one side, or red on the other, loses its cold property in proportion as it loses its own purity. No composition of hues is perfectly satisfactory unless these contrasts of temperature, as one may call them, are duly attended to.

If, for example, on a wall or a ceiling, you have a light warm tint for a panel, and another light warm tint for the margins; to interpose a strong red line would be a mistake, for you would then deprive them of the warmth which characterises them, and perhaps render them both muddy; whereas, let the line be of a decided cold colour, and you at once give all the desired effect to the two adjacent warm tints, however light they may be; thus you gain all your effect with the least amount of colour, and to act otherwise would be a mere vulgar waste of force.

Another remark I would here add whilst on the temperature of tints. When you have both a cool and a warm tint, as for instance in the panelling of a wall, the cooler tint should be the lightest in tone. I speak of large surfaces, not of mere lines or patches of colour.

A strong, cold tint, as the general wall colour of an apartment, can rarely be made agreeable. The fancies of an unlearned upholsterer are sometimes such us to afford us occasional opportunities of studying every species of obnoxious combination. I have been in rooms wholly clothed in strong blue, and nothing could be more painful than the result.

It is true a deep ultramarine, over a considerable extent of surface, may be seen on the vaulting of both the upper and lower church of S. Francesco at Assisi; and, indeed, it appears to have been a favourite colour for the vaulting of churches, where, perhaps, blue has been adopted as a symbolic colour, or more probably as a representative of the sky, studded sometimes with its stars, rather than on any æsthetic grounds. Its effect is often admirable; but this application of deep blue is wholly different from the use of it under ordinary circumstances, to which I have been alluding. In the vaulting of a lofty church, it is in comparative shadow, and rendered hazy, or neutralized, by distance. Besides, I can call to mind no instance of this deep blue being used without being considerably broken or relieved by a scattered pattern of stars or other device of different colour, usually, indeed, gilt; in this respect, as well as in many others, following the example set by their Classic predecessors.

In considering, however, the decoration of apartments (the field whereon we are perhaps most frequently called to exercise our discretion), it should be remembered that the aspect of the human complexion and the presence of the human figure, are not to be wholly sight lost of; and you will find that a large surface of wall strongly coloured, materially affects the colour of the light in the room. Thus, red walls impart a warmth to the light, which has usually an agreeable effect on the complexions which receive that light; whereas a large surface of the strong cold colour just referred to, chills the light, depriving it of that genial character which is proper to it, besides most seriously damaging all flesh colours within its range.

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* Continued from page 141, *ante*.

Whilst on the subject of contrast, I must briefly advert to the valuable property that colours have of clearing each other. The terms muddy and dirty are very commonly applied to compound hues, which owe their title to those opprobrious terms more to the injurious effects of their neighbours upon them than to any intrinsic defect of their own. Place a clear blue, for example, by the side of some purplish hue, such as dove-colour or slate, and you will deprive it of its blue tendency, without in any way increasing the purity of its other component, red; and thus you render the mixture faded and impure; whilst the misapplication of pure red to the same hue would, in a similar way, give to this purplish hue a cold, leaden, or dirty aspect, by depriving it of its warmth, which, to a certain extent, is essential to preserve the proper character of all tints allied to purple. If, on the contrary, you contrast this dove or slate colour with a buff, or even a simple gold moulding, you will at once clear up this delicate hue, and give it all the value which is due to it. In the same way, the clearness or muddiness of the numerous and beautiful class of greenish hues, the tea-colours, olives, &c. depends entirely on the character of the colour with which they may be associated. To put a pure green beside a tea-colour, would inevitably extinguish the latter, or, at all events, deprive it of its distinctive character, by obliterating that green tendency which is the true source of its utility and, indeed, its peculiar merit.

Now, with regard to the combination of colours in unison with each other, I have but little to say. It is obvious that it requires no great boldness, nor art, to bring together various hues of the same colour, nor various tones of the same hue, for *simile simili gaudet*. In bringing together these varieties, each having a close affinity to the other, it is clear you are perfectly safe so long as you take heed that one by its intensity does not annihilate its more modest neighbour.

But, besides this association of colours in unison, and besides the harmonious contrasting of colours, about which I have probably said quite enough, there is yet another class of associations, I mean that of a primary colour with a secondary, into the composition of which that primary enters. For example, red with purple or orange; blue with green or purple; and so on. This is association constantly practised and unobjectionable, so long as care be taken to make the compound hue so decided as to prevent its being turned, by the effect of the opposition, into an impure primary. Blue and green, for example, are often brought into juxta-position by the greatest masters of the sixteenth century, as by Raffaelle and his school. But you will find them carefully distinguished from each other, by each being made somewhat intense and decided.

Take this, however, as a general rule, that you should never use one hue to deprive another hue of its special character. No doubt, in the sister art of painting, this rule may have no application, for the painter must often be compelled, by the exigencies of his subject, and much against his will, to introduce an objectionable hue; and he will then neutralize it, or, indeed, destroy it, as best he may. But the room-decorator has no right, for he is under no obligation, to introduce a colour, and then do his best to put it out. When the decorator lays on a tint, either it is the right one or the wrong one. If it is the wrong one, why use it? If it is the right one, why neutralize it? I repeat, therefore, the axiom, never to use one colour in order to deprive another colour of that which is its special character.

The two kinds of association which I have last adverted to are, perhaps, the safest to use in the decoration of small apartments. But when the composition spreads itself over a larger surface, it is then that we must resort, for variety and effect, to the use of various differing and contrasting colours.

If I may venture again to throw light upon the decorator's art by a reference to the work of the painter, we shall find the painters of great historical pieces generally using a force of colour and a boldness of contrast which they would not think of applying to an unpretending landscape or a small cabinet picture of a domestic character. So, in our department of art, a large hall or apartment of stately proportions demands a force of treatment and a strength of colour which would be wholly inappropriate in the dining-parlour or sitting-room of an ordinary dwelling.

Time will not allow me to dwell much longer on these subjects; but before parting with them, it seems necessary that I should touch on what have been termed ternary or tertiary compounds. I allude to the mixed and ambiguous tints produced by the mechanical union of a secondary compound with its complemental colour, as green neutralized with red, purple neutralized with yellow, and orange with blue, producing hues which have for the sake of distinction been called olivine, russet, and citron.

I should remind you that in these mixtures the primary can only be introduced as any subordinate in force to the secondary colour; for it is hardly necessary to say that, if the primary be made equivalent in force to the two other primaries of which the secondary is compounded, the result would be strictly neutral, or no definable colour at all.

As regards these three tertiary hues, although they are in perpetual use, I need say but little, for they must be amenable in their application to the same laws that the simpler mixtures are subject to: we have but to keep in mind, that call them by what name you may, they are but neutralized modifications of the three secondary colours, and they are to be dealt with accordingly. These broken hues are often most serviceable, and may be used when pure secondaries might be harsh and violent. I must not here perplex you or myself, by entering upon the subject of the exact proportions that these intermixtures require. The discovery of the important principle of chromatic equivalents has led to very remarkable results of great importance to art, but this is a subject fitted rather for the study than the lecture-room.

It now remains for me still to deal with one other cognate matter of essential importance in the compounding and arranging of colours. The two pigments, black and white, hold a very important place in every painter's palette; and although certainly not taking rank among colours (a rank which our most distinguished authority, M. Chevreuil, seems almost unwilling to deny them), yet are they most influential instruments, whether used to qualify other hues, or used in their pure and perfect condition of black and white. It would be an endless task to enter upon an enumeration, even, of all their effects in combination with other hues, nor am I competent to that task. It is the painter only who knows these niceties of chromatic art; but in their pure state I may be allowed to express my sense of their high value in architectural decoration. Black, by its perfect opacity and coldness is of especial use in giving intensity to luminous and warm colours. The buff dress with black border in the costume of Raffaelle's well-known portrait will occur to you at once as an illustration of this. The black pencillings on the blossom of an orange-coloured tulip will also be observed as exercising a similar influence in giving clearness and intensity to the colour.

A black ground gives peculiar brilliancy to almost every colour laid upon it, and by its overpowering depth enables these colours (perhaps I should say *requires* these colours) to be used in greater intensity than would otherwise be possible without gaudiness. I need do no more than remind you of the beauty of those Oriental works where the colours shine out from a black, japanned surface. Those medallions, also, having a black ground, occurring in the beautiful decorations of Giulio Romano and that school, are familiar instances; whilst the black backgrounds to coloured paintings, and other applications of black, so prevalent in Pompeiian art, give evidence of the early appreciation of black by the accomplished artists of the classic age.

The other pigment, white, on the other hand, by its extremely luminous character, gives depth and value to contiguous hues, however delicate in tone, rendering the faintest tints effective, and redeeming from a faded or washy appearance tints of the most tender and timid character, whilst the brightest colours are found to tell out with augmented brightness upon it.

Before concluding this discourse I must urge upon you the necessity of a habitual observation of the effects of colour. The first principles are, as I have said, few, simple, and speedily mastered; but it is a careful study and a constant habit of observation that will alone secure to you a practical knowledge of these principles, and a well-founded confidence in their application. Not only should your attention be constantly alive to the effects of colour in its actual application to architecture, but I would have you habitually observant of colour in pictures. Endeavour to enter into the mind of the painter; ascertain his motives, and study the treatment of his colours; for be assured, every able painter has as good a reason for every variety of hue that he presents to your eye as the mechanician has for every screw and lever that he works into his engine. There is also a wide and valuable field for observation on the use of colour in the ceramic manufactures, and in textile fabrics. Every object of this nature which happens to fall under your observation may thus become a useful and instructive lesson. Nor need I do more than merely name to you the illimitable school of colour presented to us in the beautiful works of nature.

I now conclude. I am well aware that the matter which has been brought before you is very liable to be tedious and confused as a subject of discourse. Colour addresses itself to the eye rather than to the ear. It is time, therefore, I should close, although the subject is a fertile one, full of practical interest, and to every one, in any way, however indirectly connected with the fine arts, it is not without its intrinsic pleasures.

To be a mere doorkeeper in such a temple I regard as a privilege and an honour; and if, whilst endeavouring to do faint justice to my subject, I should have succeeded in awakening any new train of thought in your minds, or in exciting in you any desire to become more deeply acquainted with this subject of colour, I shall be well pleased to think that I have, in some measure, fulfilled the purpose of my mission here.

OUR WOODEN WALLS AND THEIR CHIEF ARCHITECT.*

RECENT PROGRESS IN NAVAL ARCHITECTURE.

A SKETCH of the principles and the progress through which our magnificent war-fleet has of late years been led to its present imposing and unparalleled dimensions, will, we feel assured, be acceptable not only to our professional readers, but to all the long list of miscellaneous perusers of the *Builder's* pages; and to this end we cannot do better than avail ourselves of the opportunity now offered, in the publication of the memoirs of one who, spite his not very special connection with the steam of improved locomotion, may well be called the Stephenson of the ocean: from these memoirs, therefore, we shall freely transfer to our pages, in a more condensed and suitable form, some of the valuable information on the subject of naval architecture which this very interesting volume contains.

Not a few of our readers, in the outset, will be surprised to learn that so far from the British fleet, of past times and of glorious memory, from the epoch of the Spanish Armada, onwards to that of the Duncans, the Jarvises, the Howes, the Collingwoods, and the Nelsons, of the grand climax of its renown, being a model of its kind, or superior to all others, precisely the contrary has been the case. The ships of the Spanish armada were splendid structures, comparatively to the pitiful little British men-of-war by which it was mastered; and in the great wars with France and other maritime nations in more recent times, the finest ships in the British fleet were foreign prizes, and the worst in the lot, with our foreign foes, as with ourselves, were, British built." It was British pluck, audacity, and daring that enabled "Britannia" to "rule the waves,"—not native superiority in naval architecture. We left our foes to build good ships for us, and, on Rob Roy's "good old rule and simple plan," appropriated them to our own purposes whenever they came within our clutches. Thus it was that every victory brought a two-fold honour to our sailors, but a ten-fold stigma on our ship-builders. When the French captured a British ship, they threw her aside, or at least put her on a lower rating: their wrecked or foundered ships were sure to be British built. On the other hand, when our naval forces were in chase, the lead was invariably taken by our French prizes, and it was the enemy's British-built ships we first caught by help of our French acquisitions. When a genuine Frenchman was seized, it became a prime favourite; and, like the wild elephant under the able snarer's training, took the lead in new captures. The French seldom or never recovered their own old craft again, because we knew how to handle their better ships with our better sailors.

Such acquisitions, however, could not but tend to improve our own science of naval architecture and our own art of ship-building. This was for a long time done in but a negligent sort of way; and so late even as 1850, out of the 140 ships in the first to fifth rates on the Navy List, fit for service, there were only about fifty copied from foreign models. Strange to say, many of the best Spanish ships of a previous epoch had been the production of an Irishman, who went over to Spain

* Memoirs of the Life and Services of Rear-Admiral Sir William Symonds, K.C.B. Surveyor of the Navy from 1832 to 1847. Edited by James A. Sharp. Longman and Co. London. 1858.

and offered his improved plans to the Spanish Government, after having failed with the English Admiralty,—a circumstance which affords us a glimpse of at least one sort of reason for our own former inferiority to foreigners in the art of ship-building; and the stubborn obstacles which the Navy Board for a time presented to the endeavours of Captain Symonds, and of others who *believed* in him, to initiate a system of improvements in the construction of our war-ships, only confirm us in the idea that this sort of reason for our former inferiority was one of overwhelming force and magnitude.

In what we may call the old fleet, however, some good ships were built at home, although many were so crank that they were turned into store-ships. Amongst the better order was Nelson's *Victory*, which dates from 1765, and is, therefore, the oldest ship but one in the navy. It is so patched and repaired, however, that like Sir John Cutler's silk stockings darned with worsted, scarcely a vestige of the original structure remains in the original form.

In 1793 Earl Spencer, when First Lord of the Admiralty, reduced the old high square stern and long raking stem to more reasonable dimensions; but at a sacrifice of stately, though certainly rather useless, ornamentation. At a later period, every Board of Admiralty, as Sir Charles Napier remarks, was seized with a "building mania," Corvettes, longer and narrower than brigs, were tried, but found wanting, and were forthwith sold out of service. Then came the "Forty Thieves," a class of seventy-fours, the French lines of which, as designed by Sir H. Peake, were altered and botched by the Navy Board, who had them built by contract. There were even fir frigates, which "neither sailed nor stood under canvas," and donkey frigates, which "could neither fight nor run away,"—all fruits of this Admiralty building mania. The bad sailing of such vessels is declared to have been the chief cause of our ill success in the American war. The old 10-gun brigs, or "floating coffins," were as dangerous to those on board as were the donkey frigates, and as unsightly. They had no room to fight their guns, no air between decks (only 5 feet high): extra provisions and stores had to be piled above hatches; and the fastest of them sailed only eight or nine knots an hour. Such was the state of our navy in very recent times.

As to the style which prevailed in the merchant service; with rare exceptions, mercantile ships were flat-bottomed, wall-sided, and top-heavy, with every disadvantage belonging to such a peculiar mode of construction. It was hardly a joke to say that our merchant ships were built by the mile, and served out by the yard, so that when a vessel was wanted, a length was cut off from the block, to which a head and stern were clapped on. It was the direct interest of her owner, for reasons connected with the system of registering tonnage, &c. to build a long, deep, lumbering ship, in which every good quality but bulk was dispensed with: though she sailed like a tub or a Thames mud-barge, she was pronounced fit to go to any part of the world, particularly as the lumbering mercantile Britishers ever flocked in convoy, protected by their costly war vessels, though the Yankees, with a clear eye to economy and common sense, built merchant-ships that could protect themselves—at least by running away.

It was the defective construction of our mercantile marine more especially, and the indirect influence which their vicious style had upon the style of ships built in the navy yards, which originally drew the attention of our modern reformer of ship construction, Captain Symonds, R.N. to naval architecture.

The problem for a man-of-war, says the editor of Symonds's Memoirs, may be stated in this form:—

"Given the number of guns, what shall the ship be?—a frigate, for example. Here we are to consider that every gun must have so much space to turn about in; so many feet on each side, so many behind. This determines, to some extent, her total length and breadth. Each gun requires so many men to work it, which gives the number of the ship's company. So many men must have so much room to stand, manœuvre, mess, and sleep in. For so many guns, there must be so much ammunition; for so many men such a quantity of provisions and water. Her hull, therefore, must be capacious enough to accommodate her crew, to hold so many casks and tanks, and a magazine, besides a supply of fuel for her engines, if she be a steamer; but, at the same time, her shape must be so 'fine,' as to promote her speed, which is a point essential to her character.

"The length, breadth, and depth of the whole structure must then be so balanced as to combine these requisites and render the entire fabric strong, firm, and symmetrical. These dimensions, again, regulate her masts: upon her masts depend the rigging, the length of the spars, and the size of the sails. And thus we arrive at the complete, well-found ship—the noblest triumph of mechanical invention."

A ship's hull is full of bends and curves, of such a shape as are best calculated to strike the water obliquely and help her on; but their number and irregularity try the powers of the naval architect. His aim is to produce a fabric uniting the greatest number of good qualities, as determined by theory and experience. Two of the most essential are velocity and stability,—the power of going well through the water, and of standing well up in it. If the ship is too light, or 'floaty,' as old Fuller says, she will upset; if too heavy and deep, she will not sail. To hit upon the happy medium, to adjust the proportions above and below water, so that the ship may float and sail at the right draught, is, in short, the art and mystery of ship-building. Here theorists step in to assist us with their investigations; and the general conclusion to which they have arrived may be stated in a small compass:—

"There is a point in the whole mass of the ship, above and below water, on which she may be supposed to turn, viz. the centre of gravity of the system, as it is styled; and it is in reference to this that all the calculations of the mathematician are made. A ship is broadest about the middle of her height and the middle of her length; but, in strictness, her greatest breadth, as determined by theory, should be forward of this mid-length; so that, her foremost half being the larger, her centre of gravity may be thrown forward. Chapman, the Swedish writer, as the result of his inquiries, and on the supposition that a ship's hull is made up of parabolic sections, says, that the greatest section or breadth of beam should be forward of the mid-point four, six, or eight times the horizontal distance of the centre of gravity from the same point; the first number for sharp frigates, the last for bluff trading ships. This gives *a fish-like shape*, broadest towards the head,—a shape which not only serves to break the force of the water, but actually conduces to speed, though at first sight it would appear to stand in its way. But it is confirmed by the well-known fact that a log of timber always tows best with its *wide* end foremost; and by the repeated experiments of the late Colonel Beaufoy, of Hackney Wick, conducted for a long period at great cost to himself. He found, by drawing different solids through the water, shaped like double cones, clubs, kites, &c., that in general the broadest part should be one-tenth of the whole length forward of the middle. Others say about one-sixth. This view is explained by the consideration that, though a ship when 'full' forward opposes her broadest end to the water, yet, after once clearing it, she meets with less resistance, since the water thus raised has an immediate tendency to sweep round along her sides and to unite abaft, and so force her on, besides giving more power to the rudder.

"To discover the place of this centre of gravity is a very difficult process, on account of the irregularity of a ship's form. . . . Elaborate rules are given for calculating its place, or finding it by actual experiment on board; but even then, at the best, it can be determined only approximately, after long and tedious figuring; so much so, that in practice its place is assumed by all ship-builders. . . . A ship, for the best part of her existence, that is, when most usefully employed, is perpetually getting lighter or heavier· she is heeling over, or pitching and tossing; and hence all these nice adjustments are put out. Her burden may be lodged too high or too low: the cargo in the hull keeps the centre of gravity down, the masts and rigging send it up; and though a few tons more or less would not be much in practice, yet it is a great deal to the mathematician, who is bound in each case to begin his calculations again, or to supply some impracticable rule for correcting the ship's trim. . . . What is the utility of ingenious theories which are too fine spun for working-day life,—of formulæ which, like La Grange's for the movements of fluids, 'malheureusement, sont ils rebelles qu'on n'a pu jusqu'à présent en venir à bout que dans ces cas *très limités!*' It is as difficult to calculate the centre of gravity of a statue as it is that of a ship, and for the same reason,—the irregularity of the form; otherwise the process is simply a tedious sum in mensuration, the rules for which are constant. It would be unpardonable in both constructor and artist not to know the principle of the centre of gravity, or to neglect its consideration; but are we therefore bound to say that a sculptor must not presume to carve a statue, or set it upon its legs, before he has worked out the calculations for its centre of gravity? To disparage the labours of analysts on this subject would be sheer presumption; but we submit [continues Mr. Sharp] that the real state of the question as regards ship-building is this:—It is hard (speaking rigorously) to calculate these centres of gravity, &c.; and when found, it is harder still to make use of them. Scientific inquiry has indeed advanced, but the difficulty of applying it in this instance is as great as ever, though as much is borrowed for the purpose as can be conveniently taken. Ship-building, in short, is an art;—not one of the exact sciences. The figure of a ship has never been reduced to a theory, which has determined little or nothing that was not well known before. The true laws of the resistance of fluids, the form of the best angle for parting the water at a ship's head, the dividing lines along her run, are still unsettled. Theory and practice here are still as much separated as the theory and practice of gunnery. And the inference is, not that pure science is misemployed in these investigations, but that the object it deals with is so heterogeneous in its character, the conditions of the problem are so involved and fluctuating, that the results when obtained are too vague and indeterminate to be of practical benefit. Aided by science in general, cultivated minds have produced finer and finer ships; but we are mainly indebted for them to experience and improvements in the arts of construction."

It appears, then, that induction from the results of experience, and a careful comparison of the best models, yield the best and easiest solution of this difficult problem to naval constructors.

What does *experience* teach? Experience teaches or proves that the parts of a good ship are these:—

"She must be so tied together in her frame as to be strong enough to resist the strains occasioned by her own weight and the force of the wind and waves. As a sea-boat she must stand up stiffly under her canvas; run smoothly and swiftly through the water; sail well when going 'large' (*i. e.* before the wind) or close hauled; answer her helm, and tack, easily and promptly; not pitch heavily in a 'sea,' but rise to the wave; carry her stores, &c. well; and above all (in a man-of-war), berth her men comfortably, have room to fight her guns, and float at such a height that, while her upper works are not too elevated, her lower tier may be not less than 6 feet from the water, so as to admit of working the guns in action, and escape the risk of shipping a sea through the ports. The constructor must then so model his vessel that she may possess all these qualities,—some of which are opposed to others. Whether she should be narrow or broad in proportion to her length, and where the maximum breadth should be, are at the bottom of all disputes among shlp-builders."

Captain Symonds contended for a broad beam, or greater breadth, just above the water; while his opponents, trained to admire the ships of the old school, were in favour of a narrow or only moderate beam. He felt that the simple plan of spreading the beam would produce his favourite-shaped floor, and the other features of a stable, swift, and roomy ship. The average length of ships of war before his time was 3·6 to 3·9 times the breadth. That of Captain Symonds's ships runs from 3·1 to 3·3 times.

"Having settled his length (*i. e.* along the main deck), breadth (*i. e.* the greatest breadth across the middle), and height,—to which standard dimensions all the other dimensions bear a settled proportion,—the constructor must next take care that his ship, when loaded fit for sea, may settle down to the depth or draught of water previously agreed on. To this end it is necessary to find the displacement, or weight of the ship and all on board, before launching. Suppose that a frigate's displacement, to bring her down to the 'load water line' (that is, the line described on her bottom by the surface of the water when she is sufficiently loaded) is 2,000 tons. If the men, guns, stores, &c. be 800, then the hull, masts, &c. must not exceed 1,200, or she will sink deeper than her constructor intended, and throw out all his designs.

"This displacement turns on the well-known hydrostatic principle, that as a body sinks down in water it displaces a quantity of water exactly equal in *bulk* to the part below water, and equal in *weight* to the whole body. In this sense the immersion is equal to the displacement, and the difference of draught at two periods is an exact

measure of the difference of weights put on board. Its right application was first pointed out to English builders by Sir Anthony Deane, a man of science in Pepys's day; before whose time Raleigh had occasion to caution shipwrights 'not to be deceived herein (as for the most part they have ever been), that the ship sink no deeper into the water than they promise.' The method of calculating this is the most useful contribution of mathematical science to ship-building. That part of the hull immersed is supposed to be cut into several horizontal or vertical sections; their contents are then found separately and added together, 35 cubic feet on the average being allowed for each ton. From the displacement, the stability at various inclinations may be determined. The labour attending these calculations is to a great extent superseded by Mr. Edye's *Scales*."

Great breadth of beam and extraordinary, [wedge-like] sharpness, says Captain Symonds (in a tract published long before he became surveyor to the navy), "are the characteristic features of my system, with a careful attention to the stowage, the stand of the masts, and the cut and setting of the sails." Some parts of his style are a little obscure, and probably one or two of his deductions are not justified by the rules of strict *theory* (though they are within the limits of a safe *empiricism*); but, with these drawbacks, his Tract lays down the general principles of ship-building on an improved and solid basis. By "taking from the flat floor of a ship of the old construction, and adding the fulness to the breadth above the water line," giving her that peculiar feature which he terms "bearing," he arrives at his fine "wedge-shaped bottom." He affirms that a vessel of this formation, with increased beam in her frame, 6 inches to 3 feet above the line of floatation (when laden) would possess these advantages:—She would carry more dead weight; would be stanch under canvas when pressed by the wind; would roll less; would, by her sharp broad figure, be more capable of velocity; and would offer more resistance to lee-way. She would admit of greater depth of hold; would shift her cargo less; and would require less ballast to replace the cargo. She could be fitted with lower topsides and bulwarks; would afford an "improved system of tumbling home aloft, to concentrate the weight above water;" would allow of a more roomy deck for the ordinary working of the ship, or in case of action,—as well as more spacious hatchways, and for the better stowage of boats, spars, &c.; while the masts would be steadier, since a greater speed would be given to the standing rigging. And such an improved vessel, he submits, would not be more expensive than others. Even merchant ships, if properly masted and rigged, not being "embarrassed in their superstructure with ordnance," might be made to sail faster than men-of-war, and perform their voyages in war-time independent of convoy. "Why, then, should the present mode of admeasurement, so ruinous to the art of construction, and favourable only to preposterous, crank, and unwieldy ships, be any longer continued?"

Such were the principles which, in the midst of an immensity of opposition, were finally realized in the shape of a complete revolution in the received system, to which the superiority of ship after ship modelled on Captain Symonds's lines inevitably led; till at length there appeared a magnificent fleet of 211 vessels of all classes built or commenced on these new principles. Many others were cut down so as to approximate towards the same forms, and having once "broken the line," Sir William made it easy for others to follow and win further victories; so that we now possess floating bulwarks which for size, power, and armament are justly the pride of the country, though they may be placed in circumstances where their very size renders them useless.

At present, with steam as an auxiliary, there is a tendency to make longer and longer ships; increased length, it is said, giving more speed and breadth of sail, without sacrificing stability: and here the wave system of Mr. Scott Russell, to whom ship-building owes much, may be said to be superinduced on previous principles; but it is considered to be a question for seamen to determine, whether the advantages just alluded to (irrespective of those of the wave principle) are compensated by the want of compactness and strength in a long ship, the increased friction, and the difficulty of working her at sea or in harbour. As regards the mere principle of increased length, the *Leviathan*, just launched, will very shortly decide the advantages or disadvantages of this principle, in its influence on rapidity of sailing and stability of motive friction and fabric: our impressions, the result of some attention to the subject, and long consideration, are strongly in favour of big ships.

In the volume under notice there is an immense mass of correspondence from naval and other authorities, most of it expressing the most unqualified approbation of the ships built on Sir William Symonds's system, and the whole constituting a most triumphant tribute to his genius, and evidence of his success as the reformer and improver of our naval bulwarks.

We cannot conclude the present sketch without thanking the editor of the memoirs, and expressing our sense of the ability with which he has performed his task. The less scientific, or more personal and biographical, details of the life, and of the professional or scientific struggles of the subject of the memoirs, are also full of popular and general interest.

AN ACCOUNT OF THE NEW PALACE AT WESTMINSTER, AND THE PROGRESS OF BUILDING IT.*

THE residences of the various officials whom I have mentioned above are almost now occupied, and have been fitted up with every regard to modern ideas of comfort and refinement. Though every portion of the fittings and furniture is of a Gothic character, it has been my father's aim to show, as far as possible, that the notion of a Gothic house being necessarily inconvenient, is a fallacy founded upon an imperfect appreciation of the extent to which the resources of the style may be developed, and that there are no modern appliances from which the dweller in a Gothic residence need be debarred.

The most important portions of the new palace, as regards its external appearance, are undoubtedly the main towers, and a short description of these may not be undesirable. The central tower is now completely finished, and I will therefore speak of it first. The foundations were laid upon 7 feet 6 inches of concrete, and great care was taken in building them, in consequence of the large apertures required by Dr. Reid, which pierce the basement story in all directions. The principal floor is carried upon a brick vault, springing from the walls to a circular cast-iron curb in the centre, supported by columns, and the ceiling over the octagon or central hall is a stone groining 70 feet span, without any central shaft: this groin was intended by my father to have been considerably higher than it now is, but the demands of Dr. Reid for extensive air spaces over it compelled the adoption of the present lower design. A strong wrought-iron tie bar is inserted in the wall all round the tower, at the springing line of the groining. The upper part is carried upon a brick cone, starting from the top of the walls of the octagon. This cone carries the lower lantern, which in its turn supports another and a smaller cone, upon which the upper lantern and the spire are constructed. These cones were built without centering, and there were many peculiarities in the process of constructing the tower; but as you have already heard a description of these matters, I forbear to touch upon them now. The Central Tower was intended by Dr. Reid to be the central point of discharge of vitiated air from the whole building, but I believe Mr. Gurney makes little or no use of it at present for that purpose. The Victoria Tower is situated at the south-western extremity of the building, and its general features are no doubt familiar to you. The carefully-executed model on the table, by Mr. Mabey, will give a better idea of its appearance than any description that I can write. Great precautions were necessary with the foundations, as the site was extremely bad and full of quicksands. A double close row of piles was driven completely surrounding the site: the earth within this species of coffer-dam was then excavated, and concrete thrown in to a depth of 10 feet 7 inches. Two courses of 6-inch landings were then placed on the concrete, and upon them the walls were carried up, without accident of any kind. The corner octagonal turrets are built hollow, being intended to be used by Dr. Reid for the passage of air. One of these corners contains an open iron staircase, which gives access to the top: the upper portion of the turrets finishes with a light open pinnacle, in which a winding staircase will be inserted. The various floors of the tower are fitted up with iron beams and columns, forming so many fireproof receptacles for records and papers of value, and the plans have been so arranged as to admit of a lift passing up the well-hole of a staircase in the middle of the tower, communicating with the various floors. The roof is now in course of construction, and most of the ironwork for it is ready for fixing. My father has determined to make it of the general form shown in the model, but there are some questions connected with the flag-post and other details at present undecided. There is, however, little reason to doubt that this year of 1858 will see the last plate fixed on the roof. In describing the towers of the New Palace, the Clock Tower must not be forgotten: it stands at the north end of the building, and from its propinquity to the bridge is perhaps made more the subject of comment than any other portion of the edifice. My father's view in designing this tower was to make the clock the predominant feature: all else was to be pedestal or roof. The windows are few and narrow, and hardly prevent the tower from appearing actually solid, while the roof, with its decorative metalwork and gilding, forms one of the most conspicuous features of the building, when seen from a distance. The model before you, from the same skilful hand as the others, sufficiently explains the nature of the design. The interior of the tower is taken up by the shaft for the clock weights, a staircase from top to bottom, a large vitiated air-shaft required by Dr. Reid, and a few prison rooms, supposed to be for the benefit of refractory members of Parliament. My hearers have heard a great deal about the clock which is yet to come, and also about the unfortunate Big Ben, over whose tragic fate it only remains to drop a tear. Every arrangement in the tower is ready both for clock and bells, and has been so for a considerable time; but it is to be hoped that the new bell will not be in so great a hurry as the last, to ring his own dirge. Both clock and bell will be hoisted up the central shaft in the tower in the same manner as the whole of the building materials have been raised; for it may be remarked, in passing, that the Clock Tower as well as the Victoria Tower have been built entirely without external scaffolding; hence the silly story about hoisting the clock and bells, which was started some time since. The clock faces are of cast-iron, perforated, and the apertures in them are filled in with white glass, opaque by day, but admitting of illumination by night, without rendering visible the light placed behind it.

As the works of the New Palace proceeded, it was thought that the erection of so large and costly a national building afforded a suitable opportunity for encouraging the artistic energies of the country, with reference to the embellishment of the interior by the sister arts of painting and sculpture. A Royal Commission was therefore issued to certain distinguished noblemen and gentlemen, presided over by his Royal Highness the Prince Consort. The architect was called on to present a report to the commission (of which he is not a member) expressing his views generally on the subject. This was accordingly done, and I may perhaps be permitted to quote some passages from his report:—

"With reference to the interior of the new Houses of Parliament generally, I would suggest that the walls of the several halls, galleries, and corridors of approach, as well as the various public apartments throughout the building, should be decorated with paintings having reference to events in the history of the country; and that those paintings should be placed in compartments formed by such a suitable arrangement of the architectural design of the interior as will best promote their effective union with the arts of sculpture and architecture. With this view I should consider it to be of the utmost importance that the paintings should be wholly free from gloss on the surface, so that they may be perfectly seen, and fully understood, from all points of view; that all other portions of the plain surfaces of the walls should be covered with suitable architectonic decoration, or diapered enrichment in colour, occasionally heightened with gold and blended with armorial bearings, badges, cognizances and other heraldic insignia emblazoned in their proper colours. That such of the halls as are groined should have their vaults decorated in a similar manner, with the addition occasionally of subjects, or works of art, so interwoven with the diapered ground as not to disturb the harmony or the effect of the architectonic decorations generally, or interfere with the elementary features of the architectural composition. That such of the ceilings as are flat should be formed into compartments by moulded ribs, enriched with carved heraldic and Tudor decorations. That these ceilings should be relieved by positive colour and gilding, and occasionally by gold grounds with diaper enrichments, legends, and heraldic devices in colour. That the screens, pillars, corbels, niches, dressings of the windows, and other architectural decorations should be painted to harmonise with the paintings and diapered decorations of the walls generally, and be occasionally relieved with positive colour and gilding. That the door-jambs and fireplaces should be constructed of British marbles of suitable quality and colour, highly polished and occasionally relieved by colour and gilding in their mouldings and sculptured enrichments. That the floors of the several halls, galleries, and corridors should be formed of encaustic tiles, bearing heraldic decorations and other enrichments in colours, laid in margins and compartments, in combination with polished British marbles, and that the same description of marbles should also be employed for the steps of the several staircases. That the walls to the height of from 8 to 10 feet should be lined with oak framing, containing shields with armorial bearings emblazoned in their proper colours; and that an oak seat should in all cases be placed against such framing. That the windows of the several halls, galleries, and corridors should be glazed doubly, for the purpose of tempering the light and preventing the direct rays of the sun from interfering with the effect of the internal decorations generally. For this purpose the outer glazing is proposed to be of ground glass in single plates, and the inner glazing of an ornamental design in metal filled with stained glass, bearing arms and other heraldic insignia in their proper colours, but so arranged that the ground, which I should recommend to be of a warm yellowish tint, covered with a running foliage or diaper, and occasionally relieved by legends in black letter, should predominate, in order that so much light only may be excluded as may be thought desirable to do away with either a garish or cold effect upon the paintings and decorations generally. Practically, I consider that the double glazing will be of essential service in carrying out the system of warming and ventilating proposed to be adopted in the building generally, which system renders it unnecessary that the windows in those portions of the building above referred to should be made to open, so that all prejudicial effects upon the paintings and other decorations which might be caused by the dampness and impurity of the atmosphere, and much practical inconvenience, and probably unsightliness in the means that would be necessary to adopt for opening and shutting casements, would be avoided. That in order to promote the art of sculpture and its effective union with painting and architecture, I would propose that in the halls, galleries, and corridors statues might be employed for the purpose of dividing the paintings on the walls. By this arrangement a rich effect of perspective, and a due subordination of the several arts to each other, would be obtained. The statues suggested should be, in my opinion, of marble of the colour of polished alabaster, and be raised upon lofty and suitable pedestals placed close to the walls in niches surmounted by enriched canopies; but the niches should be shallow, so that the statues may be as well seen laterally as in front. The architectural decorations of these niches might be painted of such colours as would give the best effect to the adjoining paintings, being relieved in parts by positive colours and gilding, and the backs of them might be painted in dark colours, such as chocolate, crimson, or blue, or they might be of gold, for the purpose of giving effect to the statues. Having thus described the views I entertain as to the character of the decorations of the interior generally, I now proceed to notice in detail the special decorations and arrangements which I would propose for the several halls, galleries, and principal apartments.

I would propose that Westminster Hall, which is 239 feet long, 68 feet wide, and 90 feet high, should be made the depository, as in former times, for all trophies obtained in wars with foreign nations. These trophies might be so arranged above the paintings on the walls as to have a very striking and interesting effect. I would further suggest that pedestals, twenty in number, answering to the position of the principal ribs of the roof, should be placed so as to form a central avenue, 30 feet in width, from the north entrance door to St. Stephen's porch, for statues of the most celebrated British statesmen, whose public services have been commemorated by monuments erected at the public expense, as well as for present and future statesmen whose services may be considered by Parliament to merit a similar tribute to their memories.

* By Mr. E. M. Barry. See p. 118, *ante*.

The statues which have been already proposed to be placed against the walls between the pictures, I would suggest, should be those of naval and military commanders. The subjects of the paintings on the walls, twenty-eight in number, 16 feet in length, and 10 feet in height, might relate to the most splendid warlike achievements in English history, both by sea and land, which, as well as the statues that are proposed to divide them, might be arranged chronologically. To give due effect to these suggested decorations, it is proposed that the light should be considerably increased by an enlargement of the dormer windows in the roof, by which also that extraordinary and beautiful piece of decorative carpentry of the fourteenth century may be seen to much greater advantage than has ever yet been the case. This noble hall, certainly the most splendid of its style in the world, thus decorated by the union of painting and sculpture and architecture, and aided by the arts of decoration as suggested, it is presumed would present a most striking appearance, and be an object of great national interest." Here follow some detailed recommendations as to other parts, with which I shall not trouble you; after which the report proceeds:—"I have now described in general terms the whole of those portions of the building that might, I think, with propriety and effect, be adorned with works of art and the arts of decoration; but, in making the several suggestions which have occurred to me, I should wish it to be understood that I have merely stated my own views on the subject as far as I have hitherto been able to consider it in its general bearings, and with a view to show how the objects for which the commission has been established may, if desired, be carried out in the decorations of the new building to their greatest extent. I should not, however, wish to be strictly confined in all cases to the adoption even of my own suggestions; as, upon a more mature consideration of the subject in detail hereafter, when the shell of the building is completed, I may be induced to vary and modify some of the views which I entertain at present, and which, I fear, I have but imperfectly communicated in this paper."

The two drawings of St. Stephen's Hall and the Royal Gallery, by Mr. Nash, exemplify my father's views as above quoted; but, since the time of their appointment, the Royal Commissioners have taken entire charge of the various fine art decorations which have been introduced into the building, and have held exhibitions in Westminster Hall, of cartoons and sculpture submitted to them in competition. Frescoes have been painted in the House of Lords, by Messrs. Dyer, Cope, Maclise, and Horsley. In the upper waiting-hall, river front, by Messrs. Cope, Watts, Herbert, Horsley, Tenniel, and Armitage. The Queen's robing-room is now in the hands of Mr. Dyce, and the peers' robing-room is committed to Mr. Herbert. Mr. Ward is also engaged on a series of pictures for the corridors leading from the central hall, some of which have already been exhibited. Bronze statues have been placed in the niches of the House of Lords, by Messrs. J. Thomas, J. C. Thomas, M'Dowall, Woodington, Timbrell, Westmacott, Thornycroft, Thrupp, and Richie. Large white marble statues have also been erected on the pedestals in St. Stephen's Hall, by Messrs. Foley, Bell, Marshall, M'Dowall, Bailey, and Carew. In speaking of these last-named statues, while admitting most of them to be extremely beautiful works of art, I cannot but regret that they should have been executed on so large a scale as to be detrimental to the architectural effect of the hall. The same remarks would apply to the fine group by Gibson, in the prince's chamber. In this case the figures are more than 9 feet high, while the room is only 45 feet by 25 feet. In the prince's chamber, Mr. Theed has designed some bas-reliefs of historical subjects in the panels, which have been electrotyped from his designs, and add greatly to the appearance of the room. Paintings have also been commenced in the wall panels of this chamber, which display satisfactorily the effects of the gold backgrounds, which my father has always recommended as the most suitable in such cases. When I add that to Mr. Maclise is entrusted the embellishment of the royal gallery, I have, I believe, completed the list of works carried out by the Fine Arts Commission. With the exception of the works above mentioned, the sculpture of the building has been completed, as I before said, under my father's guidance, by Mr. Thomas, as regards the stone carving, and by carvers, under the direction of Mr. Pugin, in all matters relating to the wood finishings of the building. The sketches of statues before you, by Mr. Thomas, will give some notion of the style of sculpture adopted. After many delays with reference to the ventilation of the House of Peers, which was ultimately removed from Dr. Reid's control, the chamber was completed, and was opened on the 15th of April, 1847, without any public ceremony, and from that day to the present has been in constant use. The peers' libraries and refreshment-rooms were opened at the same time; and, on the 3rd of February, 1852, the whole of the public entrances, with the House of Commons, Central Hall, and St. Stephen's Hall, and adjoining offices were delivered up by the architect. Since that time most of the remaining portions of the edifice have been completed, and at this moment very little remains to be done. The Speaker's house is all but finished, and will be occupied after Easter. The residences in the south wing will be completed in a few months, and before long the main towers, the Royal gallery, and the Royal staircase will be ready for occupation, so that by the close of the year the present works at the new palace will be brought to a close. Much has been said about the time the edifice has taken to construct, but I think, in addressing an audience like the present, I have no need to say much on that head. It may suit those who imagine an architect can be urged onward to any extent by external irritation, to complain of the rate of progress at the New Palace; but, when the difficulties of all kinds which have beset the work are duly considered, and it is borne in mind that the public business of the country has never been interrupted for an hour, but has always possessed temporary accommodation on the site, which has only been handed over piecemeal to the builders—architects, at any rate, will not think the time that has elapsed, between the laying the first stone, in 1840, and the completion of the building, in 1858, has not something to show in the work that has been done.

I may now proceed to say a few words on the cost of the Palace; which, though very large, has been much exaggerated. The total cost of the structure up to the present time, as far as the architect is concerned, has been 1,768,979*l.* 8s. 1d.; and it is not surprising that those who look at these figures, and then contrast them with the original estimate of 707,104*l.*, should demand some explanation of so enormous an excess. But the building to which the original estimate applied, and that which now exists, are two different things, though the public, who call them both New Houses of Parliament, cannot be expected to understand the difference. The following are some of the many modifications of the design which have been sanctioned by the Government since the original estimate was made:—1. The river embankment and coffer dam were not included, and it was found necessary to go down much deeper for the foundations on account of the treacherous nature of the soil than had been at first intended. 2. A much harder stone was selected than that on which the estimate was based, and I may state that the labour on Anston stone is considered by competent authorities greatly to exceed that on Portland. 3. The building was ordered to be made fire-proof by the substitution of iron girders and brick arches for ordinary floors, and iron roofs instead of slated coverings were ordered to be formed. 4. Arrangements for warming and ventilating were expressly excluded, and those who will take the trouble to look at the general sections of the building will see by the space they occupy, compared with the habitable portions, that these can have been no inconsiderable items of expense; indeed, portions of the building were carried up for the purpose of providing continuous air and smoke flues in the cross roofs connecting those in the main building. The central tower is also an addition, not having formed part of the original estimate, nor having received the sanction of Parliament until the rest of the works were in an advanced state of progress. Many extra suites of rooms and offices have been added; amongst others, complete residences for the Clerk of the House of Commons, the Clerk of the Crown, and the gentlemen in charge of the ventilation of the building, as well as many other smaller works too numerous to be mentioned here. The works consequent on the orders of the Fine Arts Commission and the restoration of St. Stephen's Crypt also formed no part of the original estimate, and a more elaborate mode of internal finishing was rendered necessary by the determination to make the building a means of encouraging the fine arts of painting and sculpture. When these circumstances are borne in mind, and the upward tendency of prices for labour and materials during the last ten years is also remembered, it will, I think, be seen that a mere comparison of the original estimate with the actual cost of the edifice does not present a fair aspect of the case; and many present will readily understand the numerous unavoidable expenses which gather round a building of such size and peculiarities as the New Palace at Westminster.

The present iron roofs were adopted in consequence of the requirements of the ventilating scheme which provided smoke-flues stretching along the roofs in all directions, and which, being necessarily heated to a considerable temperature, required a fire-proof covering not likely to be injured by heat. Galvanizing was adopted, as a means of protection, after considerable inquiry, and after it appeared it had been used extensively in the public establishments of France. Experience has shown that however well it may answer elsewhere, galvanized iron will not long resist the injurious effects of a London climate and atmosphere, and the means of protecting the iron roofs at the New Palace have occupied much of my father's attention. At last, after a great many trials of different paints and other compositions, one by Mr. Szerelmey, a Hungarian gentleman, has appeared to him to promise great success. Mr. Szerelmey has already applied his process to the roof of the Clock Tower and some other portions of the building, and if it should succeed, as it seems likely to do, the whole of the roofs will probably be treated in the same manner. Mr. Szerelmey also applies his composition to stonework, and has furnished me with specimens of iron and stone, both of which are coated with his composition, which he informs me will not cost much more than a coat of ordinary paint, and will not discolour the stone.

No orders are yet given with reference to the remaining portions of the design adjoining Westminster Hall and New Palace Yard; and, in fact, the question of the removal or non-removal of the Law Courts from Westminster must be determined, before anything can be done with a large portion of these buildings, my father's designs for which are shown in a Parliamentary paper of the session 1855, and display a great entrance gateway, with flanking turrets at the corner of New Palace Yard, which would form the public entrance to the building, as distinguished from the royal entrance at the other corner under the Victoria Tower. The construction of the new bridge with twice the width of the present Westminster-bridge, with the increase gained towards the New Palace, will render the destruction of the houses on the south side of Bridge-street a matter of public convenience, and almost of necessity, and the lowering of the roadway can hardly fail to render the view of the building from it more favourable than it can be said to be at present. The Institute has already had the advantage of a very interesting description of the works of the new bridge, which are being carried on under the directions of Mr. Page, C.E. who is pushing them on with great energy. My father's views with respect to it have always been, that (assuming public convenience to require a bridge at Westminster), it should be as wide and low as possible, having regard to the importance of the traffic over it as well as the water-traffic beneath. The width he was anxious to obtain was 100 feet; but 84 feet, the width now decided on, is a good instalment, and will greatly exceed that of any other metropolitan bridge. The arches are not to be two or four centred, but will be a continuous curve reminding us of the bridge of Santa Trinità at Florence. The piers, however, will be far less bulky than in that celebrated example. A portion of the structure will, it is hoped, be opened towards the close of this year, if no unforeseen difficulties shoul! arise. Mr. Page's designs for the construction of the bridge have been subjected to very severe criticism, as may be seen by the minutes of evidence taken by the last Committee of the House of Commons which sat on the subject, and which reported in Mr. Page's favour. The design exhibits so many novelties and ingenious contrivances that the profession cannot fail to watch with interest the engineer's proceedings, and wish him every success in conducting his responsible undertaking to a close. Before I conclude, there is one point to which I may be expected to allude, namely, the professional remuneration of my father as architect of the New Palace; but the whole question has been so recently before you, and the agitation of it at all was so distasteful to him, that I shall only briefly allude to it here, to state, on the authority of a Treasury minute, that their lordships considered it "liberal" to force on an unwilling recipient a scale of remuneration less than is enjoyed by those of equal standing, whether engaged on public or private works, and that they thought it "fair" to avail themselves of the power possessed by a Government to refuse any reference of the case to an impartial authority, though they invariably concede such a privilege to tradesmen whose accounts are disputed. The contractors engaged upon the work have been very numerous, and I cannot now name more than those principally concerned. Messrs. Grissell and Peto, and afterwards Mr. Grissell alone, conducted the works up to 1852, after which Mr. Jay undertook the contract, which he is now carrying out in a manner thoroughly satisfactory. Messrs. H. and M. D. Grissell have executed a great part of the ironwork with their usual excellence; and Mr. James, of Broadwall, has carried out the iron roof of the Clock Tower, and some other parts of the ironwork since the beginning of Mr. Jay's contract. When I have said that Messrs. Hardman have done the ornamental ironwork and stained glass, Mr. Crace the decorations, carpets, curtains, &c. Messrs. Gillow the furniture, and Mr. Minton the tiles, I have, I believe, described the most important contributors to the work under my father's direction. Mr. Crace has taken great pains with the upholstery, &c. which he has executed to my father's entire satisfaction; but these matters, as well as the furniture, are now being done (designs included) by the Office of Works, and are altogether removed from the control of the architect. I must not forget that the greater part of the hot-water pipes, boilers, and kitchen fittings, have been supplied by Mr. Jeakes, who so well understands all such arrangements. Mr. Robert R. Banks was my father's chief assistant, and very ably carried out his views during the earlier years of the New Palace, and until he entered upon his present partnership with my eldest brother. The post of principal clerk of works has been filled for many years by Mr. Thomas Quarm, whose skill and energy in conducting the works could not, I believe, have been surpassed. The elaborate scaffoldings of the towers have been carried out by him, partially under the direction of Mr. Meeson, in whose great constructive ability my father has always had the highest confidence, and to whom he entrusted the principal management of such matters; and I think the fact that there has not been a single accident in carrying out the works due to the building operations, indicates no ordinary skill in those who have been responsible for their direction. Those of my hearers who have noticed Mr. Quarm's recent scaffolding of the Clock Tower, will, I am sure, admit that there has been plenty of scope for ingenuity in such arrangements.

I have now very imperfectly completed my task of describing the New Palace at Westminster, and my wish has been not to forestall your judgment upon it, but to place before you some of the materials for forming a correct opinion for yourselves. An architect is generally considered by the public to have everything his own way, and is visited with a censure of aught that displeases directly proportioned to his supposed omnipotence. The time is not yet come for a full and complete history of the whole subject of the New Palace at Westminster; but when the many difficulties which have environed the work are borne in mind, as well as the numerous masters under whom it has proceeded, it must, I think, be admitted that the architect has some right to expect that the criticism on his production, however severe it may be, should at least partake of a discriminating character. It is not for me to enter here upon questions of taste, which it would be most unbecoming on my part to discuss. The building stands a great fact, and will be calmly judged eventually on its merits and defects by posterity, whose verdict it is worse than useless to attempt to forestall, and who will probably remember that it was nearly, if not quite, the first attempt on a large scale to revive Gothic architecture as applied to civil public purposes,—that it was erected in less than twenty years, and by a single architect.*

FROM ITALY.

EVERYTHING is now much dearer in Italy than it was twenty years ago. The hotels are, perhaps, better, but they are dearer. Our *table d'hôte* at Naples was ten carlines, though six carlines used to be the full price for dinner. The *vetturini* are much better, the carriages are very large, clean, and comfortable, with a good *coupé*, generally with four horses. We came in *vettura* from Rome to Genoa, and had wax candles every evening from Florence to Genoa, and were taken to the best hotels all along; but then the price now for *vettura* without food, is about what it used to be including food. Again, the diligence from Rome to Naples is raised from nine to eleven or twelve crowns. Even coral at Naples is 50 per cent. dearer than formerly. Lodgings at Rome and Florence are dearer, and I do not know anything cheaper. Wine that used to be 2d. or 3d. a bottle, is now 6d. to 1s. and inferior, owing to the failure of crops for the last six or seven years. At Genoa and Turin, the *table d'hôte*, formerly three francs, is now four francs.

I believe I told you what had been done at Naples, but am not sure if I mentioned that the Temple of Serapis, at Pozzaoli, stands in 2 feet of water, and is gradually going down about an inch a year: you must remember it dry. A magnificent road has been made lately up Vesuvius to the Hermitage, wide enough for a turnpike-road, with wrought border stones on each side. There is a capital road to Sorrento, made since your time, I believe. We returned by diligence from Naples to Rome; and, not being able to get a good room at the hotel, we started the next day in a return *vettura* for Perugia, having the whole of the interior to ourselves. We stopped at Civita Castellana for the first night, a beautifully picturesque place. The next day went to Terni, and saw the Falls, with snow on the ground, and were very much delighted (I had never been this Perugia line).

* We shall speedily give a very elaborate engraving of the Victoria Tower, in continuation of the long series illustrative of the palace at Westminster contained in our former volumes.

I do not know whether a grand waterfall does not look better in the depth of winter than in summer. The next day we stopped at Foligno. The fourth went to Assisi and Perugia. We were both very much pleased with the lower church at Assisi, not exactly architecturally of course. We slept two nights at Perugia, and it is but right that I should say, I think I must have misunderstood —— about the stones of Etruscan walls being of one size, as I have not found them so either at Perugia or Cortona, and as —— was some months studying the Etruscan buildings, he could not have made a mistake. The old gateway at Perugia is very interesting. When was the middle part erected—I mean the row of small Ionic pilasters above the great arch, and under the large Ionic pilasters? The same question applies to the row of small composite pilasters over the archway built into the citadel wall. I have a fine photograph of the great gateway for you to see, before giving your answer. The citadel of Perugia is quite destroyed. The inhabitants, finding its only use was to keep them in order, destroyed it during the revolution of 1848-9. A new Porta Toscana has been built, with better access than before; but with the exception of these two improvements nothing appears to have been done at Perugia for years. There are some fine old street fronts, with pointed arches. I think the glass in the cathedral at Arezzo is as fine, if not finer, than any I know—I refer to the windows of the choir.

Finding our *vetturino* treated us well to Perugia, we took him on to Genoa in eight days, passing Pistoja, Lucca, and Pisa. We generally started about half-past seven, and finished our journey by three or four o'clock each day. This is better than what I remember of old, as it gave us plenty of time to see all the principal towns in our way. Nothing has been done by way of improvement in any of these towns, except that the Baptistery of Pisa has been carefully repaired, and the windows filled with bad glass, made at Paris, Milan, and Pisa, and one window filled in with painted talc. It looks rich, but rough. The pavement round the cathedral of Pisa is now under repair. The interior of the cathedral of Lucca is fine; but that of Pisa is finer, I think. From Pisa to Genoa we were very well lodged, generally in newly-built hotels, all large, clean, and comfortable, at Pietra Santa, Spezia, and Sestri. At Spezia there are three or four very large new hotels, and some new boarding-houses, as it is becoming a fashionable watering-place. The buildings are in the modern "chaos" style. We were very much pleased with the grand scenery between Pisa and Genoa. I had travelled the road before, but it was so many years ago I was glad to go over the same ground again. Genoa is increasing: two new streets of palaces are nearly completed: the houses are somewhat in the old Genoese style, divided into three heights or principal divisions, each division containing a principal and secondary story, thus;—ground story, entresol, one-pair, entresol, two-pair, entresol; so that there is a main cornice below the so-called one and two-pair. The ground stories are used for shops, and the buildings generally are, I expect, let out in flats. A small space is left between each palace, so as to give windows at the sides, as well as at front and back. An arcade has been built between the sea and the main street below the hotels; I know not why, but probably to separate the port from the town, for the convenience of taking the duties. The railway of the goods station runs along the street close to this arcade. Some of the old Italian gardens of Pier d'arena, Palazzo Doria, &c. have been altered into "English gardens," which I think wrong, having within the last year persuaded two people to lay out their gardens in England, forming the *foreground* of their houses, in the regular Italian style. From Genoa to Turin there is a grand railway through the Apennines. Turin is increasing rapidly in the same regular arcaded style as before. How inferior the modern arcade of semi-arch on a square pier, as here, the Rue Rivoli, &c. is to the old mode of a round pillar and moulded arch, as at Venice and other towns; and how inferior to Italian arcades of Vicenza, of Palladio, &c. A new Protestant church has been lately built here, the Government finding the funds.

February 14.—Since writing the above, there has been a serious accident on the railway near Turin to-day. Three lines to Genoa, Susa, and Novara meet in one near Turin. As the train to Genoa was going out, it came in contact with a train coming in from one of the branch lines. The report is, that the carriages were smashed, and some people injured: the amount of damage I have not been able to learn. G. A.

THE RIGHT USE OF ANCIENT EXAMPLES.

THE ARCHITECTURAL MUSEUM.

THE last of the lectures announced by the committee of the Architectural Museum, was given in the theatre, at Brompton, on Wednesday, the 24th of February, by Mr. G. E. Street, "On the right Use of Ancient Examples." At starting, he said he would state at once that as his thoughts were entirely devoted to Mediæval art, he would not trouble them by any reference whatever to any other styles; and this for two reasons—the one that they had had a full and complete statement of the case against their advocates; the other, that he really could not, so far as he saw the current literature of the day, discover anything that showed any sign of life in their professors, or any evidence that the people were in the least degree really interested in them. I see, he said, a great deal of abuse of individuals, many solemn platitudes about beauty, dignity, and the like; and yet in buildings I see continual evidence, as I think, of a meretricious taste; and, as I am sure, of erroneous and antiquated system of deceptive and false construction.

The subject was one of great comprehensiveness. It included the consideration of (among other things):—

a. The lives of old artists, their modes of work and thought, and the results in their buildings.

b. The system of design which obtained at various periods; and

c. How this was developed differently in different countries.

d. Then, the system of decoration subordinate to architecture in painting and sculpture.

e. The influence of literature upon art, and, indeed, various ramifications from each of these several heads.

He then proceeded to maintain that it would be very difficult to find a record of any individual artist in the Middle Ages who was solely an architect to condemn eclecticism, and to show the gradual development of Pointed architecture.

In England, he said, the special features of the three styles into which we divide Pointed architecture may shortly be described.

First Pointed was a full, vigorous style; mouldings round, rich, and grouped with special view to effect of light and shade; ornaments sharp, telling, and vigorous; forms always severe and pure; and the whole style expressing strength, purity, simplicity, and beauty.

Second Pointed, gradually tending towards an art of lines; mouldings less effective, and generally wanting in breadth of light and shade; sculpture weaker, because, in common with other parts, appearing to try only to be pretty and graceful. The whole style expressed, therefore, richness and beauty, but its richness was luxury, and its beauty that of the courtesan.

Third Pointed, an architecture of rules and lines only; stiff and rigid in its details; weak and wanting in contrast in its mouldings; and, even where most labour was bestowed, meagre and attenuated. An art wanting altogether in freedom and grace, and always giving an impression as of mechanical task-work; never of love or adoration.

First Pointed, therefore, an architecture of adoration;

Second Pointed, therefore, an architecture of love;

Third Pointed, therefore, an architecture of task-work and mere human ingenuity.

If there be any truth in this statement of the special features of the three styles, can there be a doubt which of them we ought to choose as our chief guide in our attempt to grasp the real truths presented to us by ancient examples? Surely it is in First Pointed work only that we find no flaw, and, at the same time, the best prospect for future developments.

If this be the result of a review of architecture in England, it becomes tenfold more certainly so if we examine the architecture of the Continent.

No one who is at all conversant with the best French buildings can doubt for an instant that in them the early work is the best. I think those who are so would bear me out entirely in the assertion that the Cathedral of Notre Dame at Paris, those of Chartres, Amiens, and Laon, Noyon, Sens, and Rouen, give, beyond question, the most perfect examples of French art that it is possible to adduce. Each of them is a study for an age; and after them, you have a sudden fall from a grand, forcible, nervous style to one whose main desire is to be pretty (whose finest example is the west front of Rheims), and then to one whose only wish is to be quaint and picturesque (seen to advantage in the west front of Troyes). Of all French examples, then, there can be no doubt that those of the twelfth and thirteenth centuries are most worthy to be followed.

He maintained, therefore, that the more we examine Mediæval buildings, and the more we become penetrated with the real spirit of the men who built the noblest among them, the more surely shall we feel bound to go back to the Early Pointed style for the best examples of our art.

He maintained the superiority of the conventionalised idealisation of nature to the conventionalising of nature herself. The one gives us all the sentiment of nature, reminds us of her delicacy of contour, beauty of outline, and harmony of proportion, and yet, at the same time, is evidently an artistic conception, requiring mind and intellect for its invention far beyond that which is required for the other class, in which natural forms, vine-leaves, maple, or ivy, are taken literally as they are, but stiffened and bent into due architectural form. The latter are beautiful indeed, but the former have something very far above mere beauty. He proceeded:—

"There are some casts in this Museum which illustrate exactly what I wish to enforce on this point.

Those from the cathedral of Notre Dame at Paris do so pre-eminently. I doubt whether there ever has been more exquisite architectural sculpture than this in the world; and you are fortunate indeed to have any of it for your study here. It appears to me to be as it were a concentration of the very essence of natural forms, without any of the vulgarity (as I think I must call it) of the direct imitation of nature. As you look at it, you feel that it is as natural as nature, and yet its nature is its own,—the creation of an artist's mind,—a noble result of intellect, faith, and thought."

Another line of argument for conventionalism was, perhaps, to be found in the necessity which would arise if polychromy were generally revived. He supposed that few even of those who would argue in favour of the strictest imitation of the forms of nature would venture to attempt an imitation of her colour also.

It is neither a sufficient nor a right study of ancient examples, the lecturer continued, which confines itself entirely to our own country. It is true that every nation hitherto has had its distinct character in art, and the cosmopolitanism which would attempt to ignore such distinctions would be rash and foolish in the extreme. I can perceive, indeed, nothing more mistaken than the study only of foreign examples, or the introduction of direct imitations of them, and especially of their peculiarities, into this country. There is a danger of this, though it is indeed not unfrequently the case that the less-informed critics of the press, knowing nothing about Italian or French architecture, call everything which has any freshness or originality about it "Italian" or "French." Just now the former is the popular charge, and generally as ignorantly applied as can well be imagined. The foreign architecture from which we have to fear the most is, to my mind, that of Germany. Many of you have, I doubt not, travelled to some among its time-honoured cities: you have seen where Cologne Cathedral is rising so steadily to completion: you have visited Attenburg, and the churches on the Rhine; and some of you, doubtless, have enjoyed, as I have, the examination of those intensely-interesting cities, Lübeck, Ratisbon, Minden, Brunswick, Nuremburg, Halberstadt, and others, where one is carried back in idea perhaps more nearly to the good old times than anywhere else in Europe; and yet the very picturesqueness of these old cities is a great snare if it ever leads us to think we may safely imitate any of their specially German characteristics. It was not until the fourteenth century that Germany had a material architecture. The style of the churches before that time was borrowed from Lombardy, and was persevered in with singularly little attention down to the time when, in Cologne Cathedral and other churches in the same style, a really national style of architecture was suddenly developed. From the study of the earlier churches I believe no harm could arise; they have in many respects the same character as works of the same date in other countries, and are free, to a great extent, from the mannerism of the later buildings. When, however, we come to the later style, we have one more marked by mannerism than perhaps any architecture in the world. The exaggeration of all the features which most distinguish it is probably well known to you. The eccentric ingenuity of the window traceries, the excessive love of angularity, sharpness of light and shade, endless

lines of mouldings, and *tours de force* are among the most prominent; and it is impossible to look at some of the better modern English work without feeling how great a danger we run from imitations of it. There seems to be so great a love of window traceries among architects just now, that it can be no matter of surprise if they go to that land of tracery, and impart some of those new forms which German ingenuity think out, and, with them, that immense proportion of height in the windows and lininess in the mouldings which accompany them.

If, however, we go to Germany determined not to be led astray by the bad features of her architecture, there is much to be learnt; and in such churches as the Cathedral at Halberstadt, St. Katharine at Lubeck, St. Laurence, and St. Sebald, at Nuremberg, and others, we may perhaps realise better than anywhere else the real effect of great churches in the Middle Ages. So, too, in the brick-making districts, we may learn much as to the right use of a material which is evidently entering more and more largely into our national architecture, and of whose use we have in this country so few ancient examples of early date.

Germans were, perhaps, even exaggerated in their appreciation of the value of height, and they constantly obtained it at the sacrifice of strength and solidity of effect: their work is in this respect not unworthy of our study, because in England we have always erred on the opposite side. Save Westminster Abbey, we have scarcely an ancient building which gives in all its parts the effect of height; and the common consent which puts that church at the head of all English examples of architecture shows, I think, how very valuable this source of effect is.

No such caution is necessary in regard to the study of French architecture. In many ways it possesses much more identity of character with our own than that of any other country. So much of France belonged to us during the best periods of the Middle Ages that there is a double interest to us in its architecture, and I know no part of it which does not, on other grounds, reward patient study. Those very portions which belonged to us are perhaps of the least value; but when we consider how much our architects in the thirteenth century evidently derived from France; how, for instance, Canterbury Cathedral—their starting-point—was designed by William of Sens, who, in his own noble cathedral at Sens, had left the prototype of what he hid for us; I think we cannot refuse to allow that the study of the art of both countries is indispensable for a right appreciation of that of either of them. * * *

Then there are the features in Italian art which we ought to study. It would be a miserable error to import here wholesale a form of Gothic architecture which undoubtedly is deficient in many of the first elements of thoroughly fine work; but it would be a still more fatal error to shut our eyes to the beauties of some, at least, of the works which were successfully achieved there. I think that a careful study of them would tend more than anything else to correct the wild extravagance into which people are falling in their attempts to import into England a love for constructional colour. You have but to look at the drawings with which our Exhibition walls are covered, to see that they have little or nothing in common with these old works, and that they would be infinitely more valuable if they had. With all their many beauties, there are also some faults in Italian decoration which we should do well to avoid. For instance, Giotto and his successors constantly used painted imitations of mosaics as border between their frescoes. This one would be sorry to see repeated here; so also the perspective framework which he so much affected ought to be eschewed: but, on the other hand, is it possible to praise too much the intense simplicity and truthfulness of the work enclosed within their borders? It is in vain to attempt to convey any idea, to those who have not seen them, of the church at Assisi, or the chapel at Padua; and a simple expression of the feeling which every one must have in looking at them would appear to those who had not done so unintelligible and absurd. They are, however, almost the only two buildings, besides St. Mark's, at Venice, I have ever seen in which colour and form have been harmoniously united in every respect; and are undoubtedly, therefore, examples which ought to be studied by all who have any chance of achieving similar works in England; and it is not visionary any longer to talk of such a chance when all know that for the last two or three months a band of enthusiastic painters has been truly engaged in covering the walls of a building in Oxford with paintings on a large scale, executed, as many of the reputed frescoes in Italy were, in distemper, and with great success. The work of Giotto, at Padua, suggests, moreover, the material consideration whether we architects may not safely imitate his example, and occasionally decorate our buildings with our own hands. I speak from an experience, which I heartily wish was both larger and more successful, when I say that to the architect himself the pleasure which he takes in the execution of his ideas is manifoldly increased, where he has been able with his own hands to add something to its decoration either in painting or sculpture. Giotto did both, for he cut with his own hands some of the sculptures on his campanile at Florence, in addition to painting the chapel designed (I have little doubt) by himself at Padua. * * *

To return. My object in this lecture has been to endeavour to persuade those who have been patient enough to listen to me, that, in the best Mediæval works there do exist certain definite and obvious principles which there is nothing to hinder our entering into thoroughly and heartily. To do so, however, it is necessary above all things that we should endeavour to throw ourselves as much as possible into the same frame of mind that appears so conspicuously in the works of the old architects. This was so real, truthful, and, though a very poetical, yet so very practical a frame of mind that there is nothing in it antagonistic to any ideas rightly held at the present day. The frame of mind of these old men is eminently that which will enable us to deal with new facts in construction, new materials, new wants. Look at the vast range which the Mediæval work in different parts of Europe took. It constructed equally well in timber, brick, stone, and marble; and do you think for an instant that it could have hesitated to grapple with iron and glass? Assuredly not; and hence it is with no shame that we adopt, and are indeed proud of, the name of Mediævalist, which, from a misunderstanding of what the temper it describes is, has been applied to us not unfrequently as a term of reproach; yet the Mediæval men were always real, always practical,—and what more does this practical age demand of us?

On one point, certainly, he would defer to ancient architects; and this was in never doing anything unlike what they did, without giving ourselves a clear reason for what we do. He would take a few only of the points in which modern practice differed completely from the old way:—

a. Old churches were never, he believed, plastered, except to receive painted decorations: when these were not to be introduced, the walls were finished in the same way inside as out; and, as we see in the San Zenone at Verona, paintings were added one by one on a ground specially prepared for each of the proper size.

b. Old plastering, too, was much better and much thinner than modern. Old walls were never pointed with artificially coloured mortar.

c. Old masonry was almost always well bonded into the walls: string courses and other horizontal mouldings were called "tables," and went well into the wall: those ingenious quoins which the nineteenth century build, or have invented, would all have tumbled out long ago.

d. Old ground plans were naturally arranged, and therefore generally irregular in their outline. It has been reserved for our age to carry the system of absolute uniformity and balance of parts—the great two-and-two system of architecture—to a point which would have astonished not a little the architects of the Acropolis at Athens, as, of all other buildings throughout the world, intended to speak to men's eyes.

e. The modern idea of neatness and exactness of execution did not obtain. Compare the materials of old mosaic with new. The old varied in colour, in thickness, and in shape, so much that it is difficult to find two fragments alike. Modern mosaic is made with such unnecessary precision that it is almost impossible to find two fragments which are not alike. The same thing is true of other materials, and the tendency of the modern system is to destroy brilliancy of effect by substituting neatness for vigour.

f. In woodwork, old mouldings were not glued together. Finials were carved out of the solid end, not screwed on: the ornamental hinges on the doors were real hinges, not (as too often now) sham hinges; nor (as in one church by an "eminent architect") cut out of a thin sheet of lead.

g. Spires were not constructed of rough stone, but always, if of stone at all, of wrought stone.

h. No examples exist of ancient roofs at all similar, in lightness of timber, width of span, and insecurity of construction, to most of ours. Would it not be well to see how old examples stand with all the advantages of oak over deal added to the others, before we so boldly depart from them?

i. Men used to lavish some art upon things which are hardly ever seen:—do we? There are turret staircases at Tamworth and Winchester, and hosts of others, which are marvels of ingenuity and refinement. We specify York steps, and leave the staircases to our towers to take care of themselves.

j. Buttresses were intended for strength. Do we ever put them for the sake of appearance; and if so, why?

k. Old mouldings were never executed in cement or plaster; and, generally, no imitation of one material in another was ever thought of.

l. Old timbers were not always "chamfered and stopped:" nearly all modern timbers are.

m. Nor was old timber oiled, stained, or varnished.

n. Nor cast-iron ever used in imitation of wrought-iron.

o. Old ornament was almost always constructional: modern ornament is often constructed.

p. Lastly, old men did not copy their predecessors' works or repeat their own. When they were paid for their work, they did it honestly from beginning to end; left nothing to chance, and did not disgust us by the repetition of the same poor details in a dozen different buildings.

Pointing out to the meeting that there was a limit to the usefulness of their museum, the lecturer concluded by saying:—"I am confident it will never be really popular to introduce a distinctly foreign version even of Pointed architecture into England. The Classic and Renaissance schools have utterly failed to make themselves popular in any real sense; and so too should we, if we attempted to import, for instance, from Florence or Venice, the unadulterated forms of Florentine or Venetian Gothic. My object has been to enforce upon you the necessity of steering clear of this. You may—indeed, you must—study them so as to import into your own architecture features and principles which may harmonize with it whilst they give it more life, more power, beauty, freedom, and elasticity; but you must never forget that your real business is still to work as Englishmen, reviving an old English architecture for the same English race which carried this form of art, and this only, to perfection some five hundred years ago, and who, since its entire fall, have, beyond all question, failed utterly in the attempt to import foreign styles in its place. It is a grand work that we have before us, and we must take care that we use the opportunity which the present revival of a feeling for our art throughout the country affords us in such a manner as to secure for ourselves a place in the history of our people, along with the good men who, in the most artistic spirit, covered our land from end to end with a noble array of cathedral and abbey, castle, college, hall, and church, second in real beauty and dignity to none in the world, and all of them rightly studied and rightly understood, affording us clues to principles, not examples to be copied,—aids to increase the vigour of our artistic manhood, not crutches to support the lifeless limbs of a decrepit profession."

ANOTHER HINT TO POTTERS.

THE potter's art has done much for us within the last few years, and is destined, I think, to effect still greater service as a medium whereby economical sanitary arrangements may be carried out in our domestic architecture, especially in the homes of the working classes.

Mr. Sydney Smirke has suggested an earthenware water-cistern: permit me by your aid to ask manufacturers to supply us with *earthenware stairs*. I would propose the riser and tread to be formed in one piece, and of such dimensions as to be generally applicable to cottages and tenements,—say about 9 inches tread and 7½ inches rise. They might be built into the wall at one end, and rested on a 4-inch wall at the other, so as to form a closet beneath; or in cases where the space below is required to be open, they might perhaps be made so that the bearing at one end would be sufficient.

The beneficial results of a staircase of this material are so obvious as hardly to require notice: incombustibility, cleanliness, and comparative absence of noise in the occupation, are desiderata of the highest importance; and, as regards cost, I should imagine there would be no excess over the present inflammable, dirt-harbouring, and creaking mode of construction.

This suggestion may have no claim to novelty, but if it have the merit of attracting notice to the subject, so that the public may be informed that

such an article is in the list of some manufacturers' produce, my purpose will be served, and I sincerely hope that the ejectment of the present ricketty, lath and plaster staircases, from the class of dwellings to which I have alluded, will follow, and be substituted by a firm, solid, and durable material, and without any increase of expense. J. W.

SWEARING IN THE WORKSHOP.

I AM sure that hundreds of your readers will thank you for directing attention to a social evil which I am sorry to say is increasing in many of our workshops. I allude to the use of words and expressions which are shocking to the ears of strangers, and degrading to those who use them. From the work-places this style of conversation is too often carried home, and to this, in some measure, may be traced those habits of swearing which are so terrible in women and young children. Many who will read this will at once acknowledge the necessity for change. They know the bad example which is thus set to apprentices, but say that it is difficult to raise a voice against custom and be laughed at. I fear that this evil is on the increase, and hope that this note may, at any rate, direct the attention of some who, wishing to preserve their own respectability, and raise the position of their class, will endeavour to form some sort of association which would give strength to the well-disposed; and I do think that in many of the best workshops it would not be difficult to get the men to agree to pay a small fine for the use of swearing language.

A FOREMAN OF A MANUFACTORY.

[*** The truth of these observations is, we fear, undeniable, both as relates to town and country. In some instances the use of such language as would make a stranger shudder has become so habitual, that it is little thought of. Not farther back than the days of George III. swearing was esteemed a gentlemanly practice. It was not thought altogether unladylike even. Those days are past, and we ask the working men to consider well the progress of the age, and by discarding such an objectionable practice, if on no higher ground, to move with the time and maintain their right position. Let those who have families reflect on the disadvantages and evil that example may lead to, and break themselves resolutely of a senseless, degrading, sinful, and disgusting habit.]

LIVERPOOL ARCHITECTURAL SOCIETY.

AT a meeting on the 10th of February, the second part of a paper, "On modern German architecture," was read by Mr. J. A. Picton: we shall probably recur to it. In the conversation which followed, the chairman, Mr. Jas. Hay; Mr. Verelst, and others, took part.

A meeting of the society was held on the 24th February, Mr. Huggins in the chair, when Mr. Boardman read a paper "On the absence of foundation stones in the public buildings of Liverpool."

The reader said he had carefully watched the alteration or destruction of tenements of the days of our ancestors in this ancient town, and he gladly availed himself of the opportunity lately afforded by the removal of the foundations of the Custom-house which preceded that now existing, to ascertain the existence of what is called a first or foundation stone. "In this research, however," he continued, "I am sorry to say I was disappointed; for although the whole of the lowest blocks (which, be it observed, as in all ancient edifices in Liverpool, are from the quarry now St. James's Cemetery) were exposed and removed, nothing in the way of cavity or receptacle for inscription plate or coins appeared. This fact induced me to make inquiries as to other buildings in Liverpool or the neighbourhood which have been wholly removed, or such parts as would have been the places for the deposit of memorials of the time of erection. The answers to my queries have all been in the negative. No foundation-stones containing deposits have been found, save that under the chapel of the School for the Blind, which is an erection of our time. The present Town-hall is, perhaps, the only edifice in Liverpool erected prior to the eighteenth century which contains a record of its erection in its walls. A plate, bearing an inscription, is imbedded in the foundation of the south-east corner." He appends the following list of edifices which have been either totally or partially rebuilt, and in the walls of which nothing has been discovered:—Destroyed: St. Matthew's Church, Key-street; St. Catherine's Church, Temple-court; Infirmary, Lime-street and Shaw's-brow; Dispensary, Church-street; and Custom-house, Old Dock. Rebuilt: St. George's Church, Castle-street; St. Nicholas's Church, Chapel-street; Walton, Bidston, and Childwall Churches; St. Thomas's Church Tower, and the Theatre Royal, Williamson-square, the front of which has been rebuilt and enlarged. The front to Williamson-square originally corresponded with that in Charles-street.

A member called attention to the fact that a list of tenders had been sent in for the furnishing of plans and specifications for the erection of a new workhouse at Bolton, at a cost not exceeding 18,000*l.* It had been considered that the professional charge for preparing plans, &c. was 2½ per cent. upon the cost of the building, which in this case would amount to 450*l.*; but on looking over the tenders he found the terms offered ranged from 25*l.* upwards. He thought this afforded instructive and rather deplorable evidence of the state of the profession, when persons were willing to furnish for 25*l.* that which was considered to be worth 450*l.* and that it showed that the profession was at a considerable discount. It would be desirable for the profession to agree upon a scale of charges and to stick to it. The public was at a loss sometimes to know what to pay when they found such variation in prices.

It was stated that many persons who had entered into this competition were understood not to be architects; and, in fact, that the man who had "got the job" kept a public-house.

PROPOSED MEMORIAL OF THE GREAT EXHIBITION OF 1851.

THE committee have selected from the designs submitted in competition, and now in the Gallery of the Architectural Museum at Brompton, the following six, from which the ultimate choice of one is to be made on the 15th instant:—

No. 6.—"Et, quasi cursores, vitæ lampada tradunt."—"An architectural composition, the base surrounded by four figures,—Industry, Science, Art, and Religion. At the sides are medallions of her Majesty and the Prince Consort. The whole is surmounted by a group symbolical of Human Progress. A wearied runner, having ended his course, hands the torch of Life and Truth to a fresh and vigorous athlete, who is aspiring to bear it through a new career."

No. 11.—"The earth is the Lord's, and the fulness thereof."—A Design combining an obelisk, sculpture, and a fountain. Four reclining figures emblematical of the four divisions of the Exhibition.

No. 12.—"Here stood the Great Exhibition."—"An Obelisk on a pedestal, with bas-reliefs emblematical of the Arts, Manufactures, and Commerce, and the four quarters of the globe. Against the pedestal, on short columns, two figures emblematical of Industry and Peace."

No. 15.—"Civilization."—"An architectural composition with bas-reliefs in the pedestal, symbolizing the four divisions into which the Exhibition was divided; the whole surmounted by a statue of Civilization."

No. 22.—"One in the Race for Fame."—"An architectural composition, surmounted by a figure of Britannia, and surrounded by four seated figures, emblematical of the four quarters of the globe,—Europe, Asia, Africa, and America;" and—

No. 31.—"Architectura autem constat, &c." (Drawings only.)—"An architectural composition, surmounted by a statue emblematical of England. In niches, on the second story, are figures of Agriculture, Industry, Commerce, and the Fine Arts."

The designs have already been visited by a large number of persons, and will, probably, be allowed to remain in the Gallery a few weeks longer than was first intended.

INCREASED USES OF THE ELECTRIC TELEGRAPH.

IT is often a matter of surprise when certain improvements have been generally acknowledged, how slow we are in putting them to a wide and practical use. Up to the present time, the electric telegraph, which, by being laid on to the different fire-engine and police stations, would be of such value, has not been brought into play. Some instances may be mentioned of its introduction into large manufactories; but the use of this wondrous engine is but of trifling extent compared to that which it will be in a very few years. Systems have no doubt to be invented; but the day may not be far distant when the telegraph will be laid on to houses and shops as regularly as the gas-light and water; and perhaps it may become a rival of Rowland Hill's penny-post. We have been led to these remarks by hearing that the Marquis of Chandos has had the electric telegraph passed over rocks and water-courses from Bichester railway-station to the study of Wotton House, and no doubt this plan will meet with many imitators.

TOTHILL-STREET RAGGED SCHOOLS.

THE lecture by Mr. S. C. Hall in aid of the funds of the Tothill-street Ragged Schools, which we announced two weeks since, was given on Thursday evening, the 25th ult. at the Eaton-square-rooms, Ebury-street, Pimlico. The comfortable, bright, and warm room was filled with an enthusiastic audience, which appeared thoroughly to appreciate the lecturer's amusing anecdotes and good stories, told as they were in his own peculiarly happy and quiet—vivacious manner.

After the lecture, Mr. Hall, in an appropriate and warm-hearted speech, made in return for the vote of thanks unanimously accorded to him, said, that the ragged schools and reformatories were already conferring inestimable benefits on society by preserving and rescuing numbers of the junior members of the community from the ranks of prison criminals; but that only future generations, and not we ourselves, would be able fully to appreciate the value, and to reap the blessings, of the noble undertaking.

We understand the proceeds arising from the sale of tickets to hear the lecture quite satisfied expectation, and will realize about 25*l.*

HOUSES FOR THE POOR.

As the rector of an agricultural parish, the cottages in which are more fit for pigs than human creatures to inhabit, I write to ask you to be so good as to give me some information, in an early number of your paper, respecting the expense of building cottages. They must have three sleeping-rooms in each cottage—one for the boys, one for the girls, and one for the parents—as without that accommodation it is quite impossible for decency to be observed. If you would put some plans in your useful paper, and at the same time a calculation of the expense, you would greatly oblige me, and, at the same time, be conferring a great moral benefit on my poor, if I can get the squire of the parish to have some cottages built on such plans. The rent of the cottages should be a fair interest on the outlay. I feel very strongly on the point, as it is quite certain that all our teaching, in church and school, is useless, if the sexes are allowed to herd together, indiscriminately, in their sleeping apartments.

I am, sir, your constant reader,

A COUNTRY RECTOR.

*** We would suggest to our Reverend Correspondent, that he should obtain the Kent Society's plans, mentioned in our leader of February 20th (p. 117), or the plans published by the Society for Improving the Condition of the Labouring Classes, 21, Exeter Hall.

DULWICH COLLEGE.

CONTEMPLATED IMPROVEMENTS.

THE Dulwich College Governors have had frequent sittings of late, and are stated to have measures before them for the improvement of the college, of a liberal character.

With respect to the gallery, the committee managing it have recommended that it should be thrown open to the public four days in each week, free of charge, and on the two remaining days for 6*d.*; tickets of admission to be no longer necessary. The recommendation requires only the sanction of the General Board for its adoption.

The character of the school, on which, by the Act, four-fifths of the funds must be expended, is now under consideration. It is said that the proposed scheme provides guarantees that the poorer classes shall enjoy the full benefit of the ample funds at the disposal of the Governors, who have wisely considered that the funds of the charity placed under their charge could not have been intended for the benefit of the gentlemen residing in Dulwich, by the establishment of feeble imitations of Eton and Harrow.

NOTES UPON IRON.

AT Wolverhampton, on Wednesday last, there was reported an improvement in the condition of the iron trade. The improvement is not, however, very marked, and has not yet extended beyond the houses that are always the first to experience a change in that direction.

The last advices from America, received from the agents of such firms, bring more than the average remittances for some time past, and orders for larger quantities.

MODERN PARIS ARCHITECTURE.

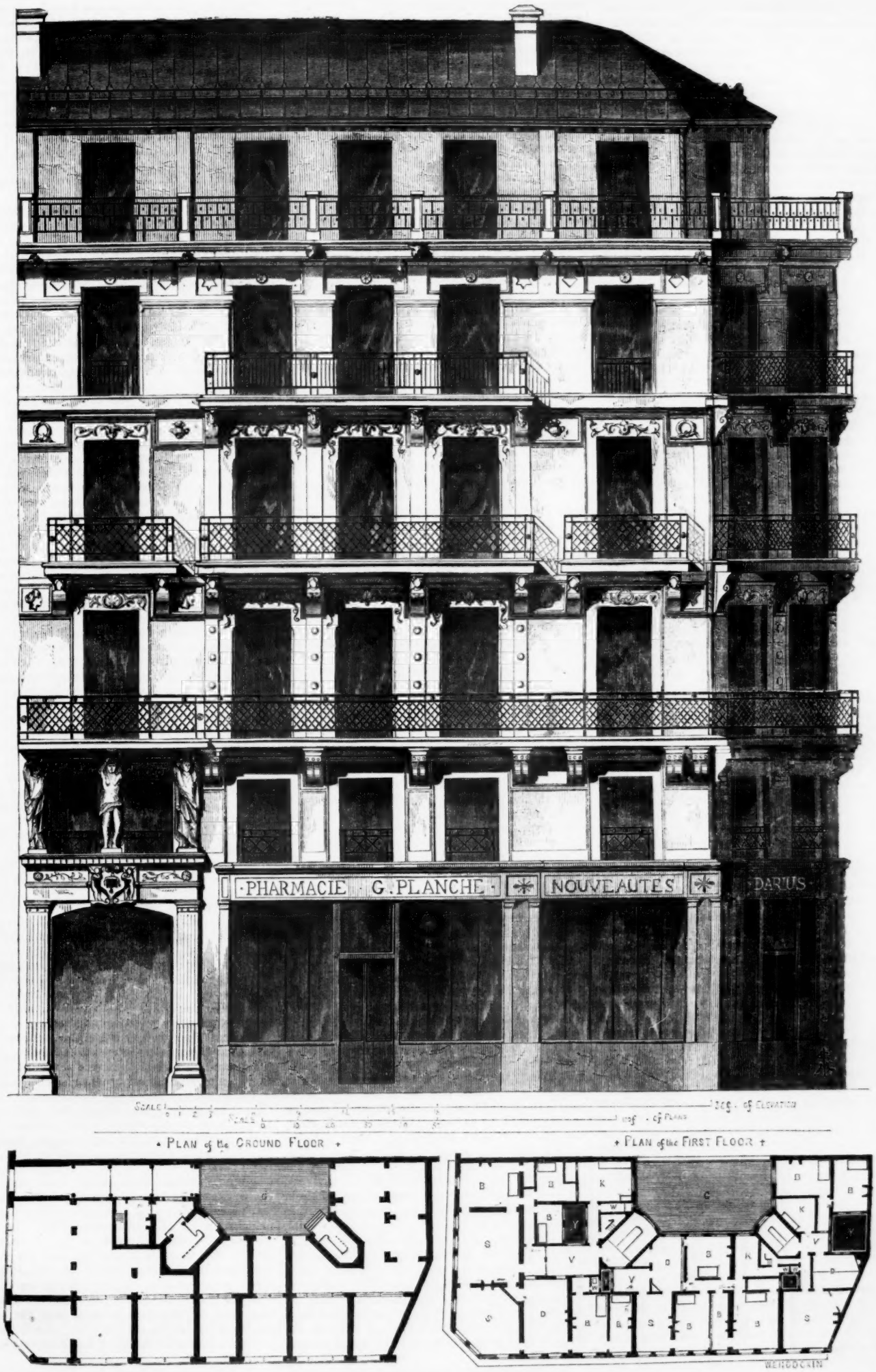
HOUSE IN THE RUE DE LA CHAUSSEE D'ANTIN.

THE house, of which we give in our present number the elevation and plans, is a fair specimen of the new houses now building in Paris. It was erected under the direction of M. Rolland, architect, and shows skill in the apportionment of the stories, and some elegance in the design of the ornaments. The entrance gateway is an important feature, terminating happily with the balcony of the first-floor, supported by three caryatides. Variety is obtained by the distribution of the balconies, supported by consoles of some originality. In another number we shall give the entrance at large, the profiles of all the mouldings, and some of the sculptured decorations.

In the plan of the first floor the staircases are advantageously placed. Each floor is divided into three large dwellings, and may produce, we are told, from 800*l.* to 1,000*l.* per annum. In this part of Paris, at the corner of the *Boulevard des Capucines*, the ground is not worth much less than 5*l.* sterling per square foot. The building, with its joinery, glass, in fact, finished complete, "*Les clefs à la main*," as they say in Paris, is roughly valued at about the same sum.

References.

B. Chambers.	S. Sitting-rooms.
C. Court-yard.	V. Vestibules.
D. Living-rooms.	W. Closets.
K. Kitchens.	Y. Inner courts.



PARIS ARCHITECTURE: HOUSE IN RUE DE LA CHAUSSÉE D'ANTIN.—M. ROLLAND, ARCHITECT.

ON FRESCO PAINTING AS APPLIED TO WORKS OF ARCHITECTURE.*

ALTHOUGH we can hardly hope to emulate in our modern practice the example of Giotto, Raffaelle, and Buonarrotti,—art's great luminaries, equally expert in the pictorial as in the architectonic art,—still ought we to be acquainted with the *modus operandi* of those who practise the sister art of painting; and, whilst despairing to arrive at that "fulness of knowledge" which Vitruvius sets before us as the goal towards which every well-educated architect should strive; there is no excuse for ignorance on our parts, if not in the practice, yet in the knowledge of painting,—as regards its progressive history from one era (with its practice) to that of another; and more especially of the general characteristics of each *mode*, so as to discern what is suitable or unsuitable as an adjunct to the productions of that art which it is our peculiar province to study.

This consideration has induced me to select for this address the subject of "Fresco Painting," the most noble of all modes of practising the art, and, at the same time, the least understood,—for even in books of recent date I find how easily the student may be misled. Dallaway erroneously describes it as the art of painting with "colours compounded of resinous gums;" and a work of quite recent publication, as the art of painting "in size colour." My object will be to point out to the student,—first, in what true fresco really consists; and, secondly, that by its own inherent character, and the practice of the greatest masters, it is the grandest of all modes, and the one in the revival of which we are personally most concerned, as being the natural accompaniment of architecture.

A few preliminary remarks on the subject of painting generally seem called for. The subject is so vast that I dare not, on this occasion, trust myself to enter at more length into the consideration of the origin and history of the art than to suggest to you its great antiquity. The schools of ancient Greece were rich in painters of merit, who were but disciples of, and improvers upon, schools still earlier; and doubtless, if the *chef d'œuvres* of Polygnotus, Apollodorus, or Apelles were exhibited upon the walls of our modern galleries, they would excite the admiration of connoisseurs, and even fill a page in Mr. Ruskin's annual critique. Again, our museums show us examples of ancient vase painting, one of the earliest developments of the art, which was carried to exquisite perfection by the ancient Etruscans, and was previously practised with equal success by the Greeks of Corinth, from whom the art is supposed to have been carried into Etruria, between six and seven centuries B.C. by the family of the banished Demaratus, who settled at Tarquini, and whose son, Tarquinius Priscus, became king of Rome.

Succeeding the Greek period, when the art was practised chiefly in encaustic or heated wax, and was thus applied to both sculpture and the metopes and friezes of architecture, came the Roman and Alexandrine periods, in which latter architectural works were adorned with a more durable kind of painting, or pictures composed of small cubes of glass or stone, cemented together, called Mosaic. The art was now, and for many succeeding centuries, concentrated, from Greece and elsewhere, at Byzantium, and a distinct school formed, working in fresco, tempera, and mosaic, which exercised a marvellous influence upon the art of later times. Passing by the art of the Christian catacombs, which partook of most of the old Roman type, we find the Byzantines gradually inoculating the heart of Italy with their stiff and rigid forms, founded upon the late Greek model, till at length, in the thirteenth century, art gradually revived, and emancipated itself from this conventional thraldom. And here I will remark upon what has ever seemed to me a singular coincidence, viz. that painting owes its revival, as well as its origin, to what must thus be termed its elder sister—sculpture; for it is but natural to suppose that the first efforts of man in an artistic sense must have been the embodying in clay, or hewing in some harder substance, the actual solid material creations of nature, whether of his fellow man, or the more ignoble works of his Creator: next, the attempt to group several figures together on a flat plane produced relievi alto and basso; and rude colouring applied to the latter would leave but a step wanting to produce an actual picture, the lights and shadows being copied on a plane surface with colour only, and omitting the relief. This may be considered fanciful, but examine carefully the stiffly arranged, statuesque, frieze-like character of the earliest known efforts of the painter's art, and I think it will lead you to this reflection. Where is the foreshortening of the figures in those ancient Egyptian and Assyrian paintings? where the attempt to produce such perspective effects, and peopled middle distances, as at its climax gave painting supremacy even over its sister art?

But if the influence of sculpture upon the origin of painting was not so supreme as I have supposed, it is a matter of history that the revival was solely influenced by it.

At Pisa, and throughout Italy, were gradually collecting the scattered treasures of Grecian and Roman sculpture, till at length, in the thirteenth century, the Pisani founded a school having nothing in common with the prevailing Byzantine types; and whence this inspiration? These very bas-reliefs and statues, of ancient classic times, phœnix-like, arose in full beauty, untainted by the curse of gradual deterioration, to revivify the decaying genius of painting, and to carry it on to newer and greater triumphs than it had ever hitherto attained.

Vasari, in his interesting life of the architect-sculptor, Niccola Pisano, describes his rapid improvement upon his predecessors, by the close imitation of the antique sculptures, and states that "the *artists* of Niccola's day, incited by a laudable ambition, devoted themselves to the study of *sculpture* with more zeal than they had before done." The effect of this study was soon seen. True and correct forms followed immediately upon the more accurate study of design; and in the schools of Tuscany and Northern Italy the seeds were sown, by a direct appeal to nature, of that glorious revival which afterwards fructified so fully in the schools of Florence, Rome, and Venice.

To return to my subject. We have to consider, first, in what does true fresco painting consist? The Italian word literally signifies new or fresh, as applied to the laying on of the colours to the newly-stuccoed or moist walls, in such a manner as to become incorporated with the lime and sink into the substance of the walls, and thus become a part of the building.

Numerous authors of note have written treatises upon the proper method of preparing the walls and ceilings, and the choice of colours suitable for what may be called painting with coloured lime-water; but as the details are very tedious, especially in the works of Vitruvius and his commentators, and of Vasari, I shall give you but a brief epitome of the directions they insist upon most strongly; and if the student is desirous of more extended information, I recommend him to study an excellent treatise by Mrs. Merrifield, in which reference is made to the ancient authorities.

1.—The wall should be made perfectly smooth, and be saturated with water; and upon this is to be applied the first coating of mortar, called the *arricciato*, composed of one part lime to two of sand, if the lime be fresh: the lime and sand are to be well mixed with water, so that the lime is thoroughly slaked; for if heat is allowed to remain in it, it will burst and crack the plaster. Vitruvius advises lime and brick-dust, and no less than six coats of plaster, the three first with lime and sand, and the three last with lime and marble-dust, each coat thinner than the last. Alberti mentions having seen ancient examples in which nine coats were laid on each other. The utmost care is required to prevent unevenness of surface, as that would be damaging to the pictorial effect, and in the ancient frescoes of Roman date the surface was highly polished. I may here notice, that, even in this apparently trifling matter, the practice of the ancients excelled the moderns, for the well-known care bestowed by them in mixing their mortars and stuccoes, as preserved to us in the ruins of Pompeii, Rome, Herculaneum, and elsewhere, the most delicate paintings in fresco; whilst the ill-prepared walls at the Campo Santo, at Pisa, and throughout Northern Italy, have left us but patches and ghost-like vestiges of works executed in ages comparatively modern; and sad it is to hear of the destruction still daily going on of works which give a romance and glory to that land far beyond the power of arms or conquest.

The lime used was preserved in water two or three years; indeed, an ancient law forbad the use of lime for this purpose that was less than three years old; and milk being worked up with it instead of water, added to its solidity and whiteness. Strange, indeed, would it be if, with all this care, the plastered surfaces of the ancients cracked like our modern contract work.

The plaster, when sufficiently dry, was ready for the artist, who sometimes outlined with charcoal or colour his day's work, or giornota, at once on the wall from a small sketch; at other times, pounced with charcoal dust the outlines of his already prepared cartoon on the wall through punctured holes, or marked or indented the lines with an iron stile. The whole surface was then covered with a fine and thin coating of lime and marble dust, called the *intonaco*, and upon this moist surface the colours were laid. Other authorities say the outline was traced *upon* the intonaco.

2. The colours used were invariably mineral or natural, because artificial colours always change by exposure to the atmosphere, and upon many colours the lime produces a destructive effect.

But, notwithstanding these disadvantages, fresco has its peculiar and distinctive charms: whilst oil pictures delight in depth of shadow, mixed tones, and middle distances, fresco avoids contrast with it by the use of light, gay, and luminous colours, an avoidance of deep shadows, and a decided architectural treatment, rendering it beyond dispute the only true style adapted for the decoration of works of religious or civil architecture. I refer you to the coloured facsimiles of the frescoes of Pinturicchio and Giotto, in support of this assertion; and I may, perhaps, add to my own the opinions of many present, that there is an indescribable charm in the union of architecture and true fresco painting, which we should fail to experience were the medium oil. The broad luminous washes, the absence of glare or varnish, the rapid and bold drawing necessitated by the impossibility to alter what is once completed, presents to the mind the artist's conception in all its vigour and freshness; whilst the judicious juxtaposition of pure earthy, yet low-toned colours, compensate for the greater technical advantages possessed by the first Van Eyck schools.

Works in "true fresco" have been exposed to the external air for ages without damage, and this gives it a great advantage over secco distemper or tempora painting. The works of the great master-minds were begun and finished in fresco, but those of less calibre were in the habit of finishing their works in secco—a vicious practice of mixing ultramarine and other delicate colours with white of egg and other tempera. As far as I can learn, the ancients always worked in the first mode, but many of the artists of the Revival invariably commenced in fresco and finished in secco; and hence the deterioration of their works, from the cracking or peeling off of those portions not incorporated into the plaster, and thus easily acted upon by the atmosphere.

Having, I hope, sufficiently explained to you the nature of fresco as compared with other modes of painting, it is time that I entered upon the second portion of my subject, and show that the greatest artists ever worked in fresco, and that it is our duty, as architects, to aid its revival in modern times.

The history of art is little more than a history of fresco painting; and no artist of note, from Cimabue and Giotto down to the Caracci and Romanelli, placed his hopes of immortality upon works executed in any other manner.

It would be useless to attempt an enumeration of either the masters who worked in fresco, or their works. I will therefore describe special examples of which I can produce illustrations.

The grand work of Michelangelo in the Sistine Chapel has recently been described by Mr. Scharf, and in it we see the climax of the schools of Tuscany culminating in the superhuman genius of this wonderful Florentine. It will be improving to go back and study the works of one of the great originators of this Tuscan school; and fortunately the works of the Arundel Society exhibited on the walls furnish us with a most detailed study of the principal work of Giotto—the Arena Chapel at Padua. He was the first of the Renaissance artists who completely changed the old Greek stiff and conventional drawing—the round staring eyes, the attenuated and pointed feet and hands, and the rigid folds of the draperies, peculiarities observable in our own Norman and the continental Romanesque, and which you will readily recognise in the illustrations I have placed before you.

To return to our example. The chapel called the Arena, because built within the precincts of an ancient amphitheatre, was built by the Scrovigno family about 1303 (it is supposed) for the knights of the order of St. Mary; and, being dedicated to the Annunciate Virgin, accounts for

* Read by Mr. J. Norton, A.I.B.A. at the meeting of the Architectural Association on Friday, the 19th February. The lecture was accompanied by coloured drawings, sketches, sections, lithographs, photographs, and other illustrations.

the great prominence given to the events of her life, as we shall presently see. The chapel is, externally, of simple character, but with a singular mixture of Roman and Italian Gothic detail. Internally it consists of a single parallelogram, 27 feet 6 inches wide and 66 feet 6 inches long; circa 2½ diameter; and a narrow chancel, or sanctuary, exactly another diameter in length: the side walls are 34 feet 7 inches high to the springing of the circular barrel vault.

In the year 1306, Giotto was commissioned to fresco the walls and roof. The two sections exhibited, together with the chromolith perspective view, will show the manner in which he executed his commission.

The side walls and roof were divided into two leading divisions or bays by three bands, circa 3 feet 6 inches in width, composed of medallion heads, arabesque foliage on blue and red grounds, and a multiplicity of narrow lines of red, green, diapered gold and sepia; in all cases, the panels and subjects carefully divided by means of a distinctly marked line of pure white colour following carefully the intricacies of the patterns. A peculiar ornament of common occurrence in the borders is an imitation of Roman mosaic, the tesseræ being formed of red, blue, and white. The main bays are each subdivided (by similar borders 3 feet 1 inch in width) into three panels in height and three in width, which is, however, varied in the south wall by the six windows which occur and reduce the panels to sixteen; whereas on the north wall there are eighteen. On these thirty-four panels are depicted events from the life of Our Lord and of the Blessed Virgin. A dado runs round the chapel to about 11 feet in height, with imitations of architectural enriched mouldings; and the wall space below each tier of subjects is divided into double panels of rosso marble by borders of a darker tone: the three leading and four subordinate bands, or wall borders, continue through the dado, and the fourteen panels thus formed are occupied by the cardinal Virtues with their opposite Vices, painted in low monotone, so as not to attract the eye from the principal subjects above. On the west wall, over the doorway, is painted the "Last Judgment;" it is similar to the usual treatment of this subject, as you will see by comparing the sketch with the series of similar subjects lately published by the Antiquarian Society. The figure of Our Lord, in an aureole or vesica, occupies the central space below the three-light window; and over the door is an enormous Latin cross borne by angels. The upper part of the east wall is occupied by Our Lord enthroned in glory, and the spandrils of the arch with the Angel Gabriel, and the Virgin of the Annunciation; and, below two subjects of the series before described, making altogether thirty-eight subjects. The vaulted ceiling is painted in deep blue, powdered with golden stars, and the two bays are distinguished by large central circles, supported by four smaller ones, in which are depicted, on a gold ground, the Madonna and Child and Our Lord, with medallions of the Evangelists, and the four greater Prophets bearing scrolls. The effect of the whole is described as brilliant and harmonious in the extreme; for with this, as with the works of most of the early masters, there is a general connection and harmony, or, in Mr. Ruskin's words, "their pictures were nearly always parts of a consecutive and stable series, in which many were subdued, like the connecting passages of a prolonged poem, in order to enhance the value or meaning of others."

Time will not admit of any lengthened description of the Campo Santo at Pisa: the photographs and drawings on the wall will furnish, however, a comprehensive idea of the general arrangement. The wall is generally divided into two panels, from the dado to the wall-plate, by coloured borders, whilst other subjects occupy the entire height; and of these I may direct your attention specially to the photographs of the frescoes by Orcagna, "The Triumph of Death," and "The Universal Judgment," and notice that the arabesque foliage, the imitated mosaic, and the medallion heads set within quatrefoil panels of the enclosing borders, are nearly identical with those previously described at Padua. It may be that these ornamental accessories were beneath the dignity of the maestri, and that an inferior grade, something between artist and house-painter, was employed to paint the surfaces of ceiling and wall spaces and put in the borders, with whom to copy was easier than to design.

He then mentioned the frescoes of Pinturrichio at Spello and Sienna Cathedral; Fra Angelico, in the Chapel of Nicholas V. in the Vatican; Ghirlandaio, at the Church of the Trinita, at Florence.

Referring to English Mediæval paintings in fresco, the lecturer instanced the crypt of Canterbury Cathedral; but most usually the pictures were in distemper.

In conclusion, he added, if from what I have said, you agree with me that fresco is the manner of painting beyond compare—the most noble and worthy to be received, let us each, in his own sphere, as individual architects, strive for its revival, and let us not forget to rejoice that already, in our Houses of Parliament, and in the most important of our modern metropolitan churches, the first fruits of its revived practice in England are beginning to be seen; and, if we are ever to have a national school in this land of wealth and enlightened knowledge, may its masters seek for immortality, not in the perishing media of Reynolds, but in that style which of necessity must, as of yore, unite ours with the painter's art,—namely,—"pure fresco."

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

A SPECIAL general meeting of the members was held on Monday evening, the 1st of March, Mr. J. J. Scoles, V.P. in the chair, to take into consideration the recommendation of the council with respect to the award of the Royal Medal, the medals and other prizes of the Institute for the year 1857, and their recommendations with reference to the medals for the year 1858. Eight sets of drawings had been received in competition for the Soane Medallion, and 50*l.* in the event of the competitor going abroad to study for a year. The subject given was,—

"A marine sanitarium, or building for the temporary residence of a limited number of convalescents belonging to the middle and upper classes of society; to consist of at least the following accommodation:—

	Approx. Areas.
A saloon	1,000 feet.
A ladies' drawing-room	800 ,,
A library and news room	1,000 ,,
A dining saloon	1,000 ,,
A writing room	600 ,,
A gymnasium	1,600 ,,

Twelve principal bed-rooms and dressing-rooms, four bath-rooms, and four private sitting-rooms. A private dining-room, a drawing-room, four bed-rooms, and two dressing-rooms for the medical superintendent."

Touching the Royal gold medal, a resolution of the council was read, recommending that the Institute should submit to her Majesty the name of Herr August Stüler, of Berlin, architect to the King of Prussia, as a proper person to receive it.

Professor Donaldson, as secretary of foreign correspondence, explained the course which had been adopted by the council, and the circumstances which had influenced their recommendation. Every third year it had been thought desirable, throwing their eyes over Europe, to recommend the bestowal of the Royal medal on a foreign architect. Canina, of Rome; Von Klenze, of Munich; and Hittorff, of Paris, had already received it. Various names had been brought before them: they had looked again at France, so eminent in the arts, and M. Lesueur (the completer of the Hotel de Ville at Paris), and M. Viollet le Duc, whose excellent Dictionary, still in progress, was known to many of them, had been named. Ultimately the reasons in favour of M. Stüler, on the present occasion, architect of the Museum at Berlin, and from whose king the Institute had received munificent donations, prevailed.

The honorary secretaries, Mr. Digby Wyatt and Mr. C. C. Nelson, added their testimonies in favour of the architect named; and

On the motion of Professor Donaldson, seconded by Mr. Godwin, it was resolved that her Majesty be advised to present the Royal Gold Medal to Herr Stüler.

Mr. Kerr justly urged, that bestowed as it was by the Sovereign advisedly, and intended to operate for the advancement of our art, the Royal Medal was no trifling honour, and that means should be taken to make this fully felt by the profession.

The report of the council on the essays and drawings was then read, and ultimately adopted, Mr. F. Marrable, Mr. Joseph Clarke, Mr. Papworth, Mr. Burnell, and others taking part in the discussion. The sealed letters were then opened, and the following is a list of the awards:—

The Soane Medallion and 50*l.* (if claimed) to Mr. David Paton Low, of Glasgow, for design for marine sanitarium, marked "Palazzo:"

A medal of merit to Mr. Henry Fuller, of Manchester, for second design for sanitarium, marked "Credo quia impossibile:"

A medal of merit to Mr. F. Robertson Kempson, of Llandaff, for third design for sanitarium, marked "Nothing useless is or low," &c.:

The silver medal of the Institute and five guineas to Mr. James Blake, of Oswestry, for illustrations from actual measurement, with descriptive particulars, of Kilconnell Abbey, Ireland.

The other designs for a sanitarium were marked respectively, "Laudatur ab his, Culpatur ab illis;" "Olympia," "Studens," "Spero dum spiro," and one with a bough of holly.

The subjects for essays and drawings for which medals will be given for the year 1858, were determined on, and will be duly advertised.

Power was given to the council to appoint trustees to hold the shares in the Architectural Union Company, liberally presented to the Institute by Earl de Grey and others; and a vote of thanks to the chairman terminated the proceedings. It would have been more satisfactory to have seen a larger number of the elder members of the profession taking part in business of so much importance to the art.

THE SOULAGES COLLECTION AND THE INSTITUTE OF ARCHITECTS.

THE petition of the Institute, mentioned last week, is now in the hands of Mr. Tite, M.P. for presentation at the first convenient opportunity. In reciting the steps already taken by the Institute to prevent the dispersion of the collection, the memorial sets forth:—

"That whereas the aforesaid council and committee of the aforesaid Institute,—moved by their great anxiety that the said collection should not be dispersed, when the valuable and beautiful objects of which it consisted would be lost for purposes of general study and national improvement, but that it should be acquired by Government, in order to be exhibited gratuitously to the public, and to afford at all times a treasury of instruction to artists and workmen,—did, on the 16th of December, 1857, attend as a deputation upon the Right Hon. the Lord President of the Committee of Privy Council on Education, to urge upon him most strenuously the important interests they conceived to be affected by the question of the said purchase:

And whereas your petitioners conscientiously believe that benefit, greatly outweighing any consideration of the sum of money to be expended in the purchase of the said collection, would speedily result to the development of the great commercial interests connected with the progress of art-industry in this country, in the event of the said purchase being effected:

This petition now therefore humbly prayeth, that your Honourable House will be pleased to take these matters into your gracious consideration, and devise such steps and proceedings as may cause the said collection to be purchased and freely exhibited for the benefit of the community at large, and of those more immediately connected with arts and manufactures in particular."

INSTITUTION OF CIVIL ENGINEERS.

ON February 16, Mr. Locke, M.P. president, in the chair, the paper read was "On Submerging Telegraphic Cables," by Mr. J. A. Longridge, and Mr. C. H. Brooks.

After investigating the laws of bodies, such as cables, sinking in a resisting medium, the paper proceeded to show the great waste of cable attendant upon paying out free from tension at the ship. The form of the curve assumed by a descending cable was then examined, and the amount of tension at the paying-out vessel, requisite to lay the cable without slack along the bottom, estimated under various conditions.

The tension at the ship in 2,000 fathoms water was stated to be about 35 cwt. for a cable similar to the Atlantic cable, but with a cable of the specific gravity of 1·5 it would not exceed 7¾ cwt.

The effect of currents was then considered, and it was maintained that they did not bring any additional strain upon a cable, and involved only a small loss of length on first entering them.

The effect of stopping the paying out was next treated of, and it was shown that it would be to bring a very heavy catenarian strain on the cable, depending upon the depth of water, and the velocity of the paying-out vessel. The amount of this strain for the Atlantic cable in a depth of 2,000 fathoms, and at a velocity of the paying-out vessel of 6 feet per second, was calculated at above seven tons.

The authors then proceeded to offer some remarks upon the mechanical structure of the cable, and strongly advocated a light cable. The distinguishing feature of this system of construction was, that the whole of the metallic portion was placed in the centre, and was surrounded by the insulating material; whereas, in the Atlantic cable, there was an outer sheathing of wire-rope twisted spirally round the insulating medium. It was shown that whilst the absolute weights of the two cables were as 21½ to 10, their relative strengths were as 11 to 25, so that the light cable, weighing scarcely one-half of the heavy one, had nearly two and a half times its relative strength.

On February 23, the paper read was "On the Practical Operations connected with Paying-out and Repairing Submarine Telegraph Cables," by Mr. F. C. Webb. The author pointed out the route pro-

posed for the Hague cables, describing their construction, and the reasons which induced the engineer, Mr Edwin Clark, to determine on adopting the small single cable system. After alluding to the advantages and disadvantages of the simple over the compound cable, he expressed the opinion that this system was undoubtedly correct, but that the cables were made too light for this particular locality, and were not laid sufficiently far apart from each other. The arrangement adopted for testing the cable during the process of construction was then explained, and the serious error of submerging cables in their final position without having previously tested their perfection by suitable means was noticed. The Atlantic cable was not tested under water from the fear of its strength being impaired by the formation of rust. This might have been avoided by galvanizing, which was shown not to have the effect of weakening wire to the extent generally supposed. The necessity of supplying buoys, with suitable moorings, to provide against accidents, was urged. Several cases were cited, where the use of buoys would have prevented the loss of cables, and the consequent waste of property.

ARCHITECTURAL PHOTOGRAPHIC ASSOCIATION.

THE first annual meeting of this Association was held on the 27th of February, at the Rooms of the Institute of Architects, Professor Cockerell in the chair. The report which was read stated that while the subscribers were few, the committee had guaranteed to artists the disposal of a certain number of the photographs, which they exhibited, but that now the standing of the Society was such that this, which had occasioned restrictions, would not be repeated; that the Association consisted at that time of 915 subscribers, while there were fifty-two honorary secretaries in different towns throughout the country. The exhibition, which closed on the 24th ult. contained 358 photographic prints, many of the first class, and the whole of the copies selected will probably have cost between 1,200*l.* and 1,300*l.* The committee had received assurances from artists of preparation for the next Exhibition, without any guarantee, their contributions to be, like those already exhibited, both from places abroad and at home. Some method of affording country members a knowledge by sight of the society's acquisitions was under consideration.

The balance-sheet showed a total sum received and accounted for, of 1,353*l.*: of this 1,150*l.* have been or will be paid to photographers

Vacancies in the committee having been filled up, thanks were voted to Mr. Hesketh, the honorary secretary, and others, and the meeting separated.

SCHOOLS OF ART IN THE WEST.

Devonport School of Art.—A meeting was held on the 22nd ult. at the Mechanics' Institute, to inaugurate a school of art for Devonport. Various works of art were displayed in the large room, and the Marines' band played vigorously, and crowds of people promenaded the room while Mr. Redgrave discoursed on the instruction given in a school of art, and Mr. Cole described the conditions to be followed in the establishment of such a school. It was a pity that another room had not been devoted to the business part of the proceedings, as the speakers could not be heard owing to the movement of the crowd. However, the school was inaugurated.

At *Plymouth* the school of art is languishing, partly for want of suitable premises. This school is held in a chapel formerly tenanted by the Plymouth Brethren.

Torquay has postponed the establishment of a school, as the inhabitants are quarrelling over the means of supporting it, and the principal builder in the place denies its necessity!

At *Exeter* and *Taunton* the schools are highly prosperous, chiefly owing to the ability and interest which the masters display in their work.

A branch school is about to be established at *Wellington*.

ARCHITECTURAL CANONS.

Mr. S. SMIRKE, in your numbers for the 13th and 20th ult. has given the substance of an interesting lecture, delivered by him at the Royal Academy.

Now, the above are palpably nothing more or less than a series of observations in elucidation of the *canons* of architecture, although not formally announced as such. Why does not the able writer above mentioned lay these canons down logically and systematically?

A syllabus of such enunciations, in the form of tersely and compactly expressed maxims, would be very valuable as doing much to dispose of arbitrary criticism,—true criticism, consisting mainly in a reference of claims and pretensions,—of dicta and dogmata to acknowledged canons.

Something in the way of the following humble and rough attempts would be very desirable from good hands.

"Architecture" (in reference to æsthetics) is the constructional expression of the sublime and the beautiful, either conjointly or separately.

"Stability" is the basis of ideal magnificence, and of economic efficiency.

"Volume" and "Proportion," in combination with stability, are the leading and indispensable requisites for the sublime or majestic.

Size does not, however, necessarily give vastness; nor wildness confer grandeur or spirit; as is well shown in the wastes of Southern Africa. The style *should* be regulated by function, and *must* be by available material,—to say nothing of funds.

Intrusive or irrelevant decoration is a disease that is as sure to mark decadence, as it is to defeat its own purpose, and involve wasteful expenditure.

Beauty may exist without magnificence; as—

> When fairy-like,
> The lady's bower
> Contrasts with dome,
> Or massive tower.

In such case, the "Graceful" is more definitively expressive than the "Beautiful," &c.

Now, there are, doubtless, dozens of other elementary truths; and these, well arranged in telling order of succession, would be very effectively handled by such men as Mr. Smirke. With such a column of canons before him, he might then proceed to elucidate and maintain each successive proposition; scarcely expecting from the lecturer much or any mathematical *demonstration*, as this could be well superseded by *illustrations*, at least in the public lecture.

R. J. NELSON, R.E. Colonel.

PROVINCIAL NEWS.

Whittlesey.—A new railway bridge, that has been for the last few months in course of construction at Whittlesey, is now open for regular traffic. It is on the Eastern Counties Company's line. The plan originated with the company's engineer, Mr R. Sinclair, and the work has been carried out by Messrs. Bennet and Son, of Whittlesey.

Luton.—The tenders for the new workhouse at Luton, opened by the guardians of the Medway Union, at the workhouse, Chatham, were as follow:—Moxom, Dover, 15,940*l.*; Rees and Co. Dover, 15,014*l.* 10s 4d.; Foord and Sons, Rochester, 14,933*l.*; Myers, Lambeth, 14,669*l.*; Parker and Aipes, Dover, 14,276*l.*; Barton, Brixton, 14,190*l.*; Spicer, Strood, 13,971*l.*; Kirk and Parry, Chatham, 13,916*l.*; Stump, Chatham, 13,637*l.*; Naylar, Rochester, 13,591*l.* Mr. Naylar's being the lowest tender, was accepted. The following was Mr. Naylar's estimate for each portion of the work:—General buildings, 10,997*l.*; entrance building, 1,048*l.*; fittings, 1,003*l.*; well, tank, &c. 284*l.*; water supply, 259*l.*; total, 13,591*l.* The plumbing, painting, &c. will be undertaken by Mr. Aldridge, of Rochester. The building is to be roofed in by October next, and entirely completed on or before March 25, 1859. The architects are Messrs. Peck and Stephens, of Maidstone.

Lymington.—The old townhall here having been at length doomed to demolition, notices were issued for tenders for the materials, and the following were received for the purchase and taking down the hall:—Mr. Grunsell offered 105*l.*; Messrs. Stickland and Frampton, 107*l.*; and Mr. George Bankes, 111*l.* Mr. Bankes's tender being the highest, was accepted.

Tenbury.—Some progress has been made here with the erection of two public buildings, the one a butter and poultry market, in the square, and the other a corn-exchange, in Teme-street. The market is an oval-shaped building, with two entrances, and is capable of holding 150 persons. The materials are red and blue bricks, and cast-iron, with open wood roof, covered with Clee-hill tile. The general character of the work is Gothic. The corn-exchange is also a Gothic building, and has stone dressings to the entrances and windows. The principal room measures 65 feet by 23 feet, and is divisible into two smaller rooms for magisterial and other purposes. In connection with this building a policeman's residence and cells for prisoners will be provided. Both these works are being carried out from the plans and under the superintendence of Mr. James Cranston, of Birmingham, architect; Messrs. Smith, of this town, being the builders.

Worcester.—At Diglis, on the banks of the Severn, some extensive chemical works have recently been erected, distinguishable by a chimney which forms a prominent feature in the locality. The manufactory has been erected by Messrs. H. Webb and Co. for the preparation of chemical manures of all kinds used for green and cereal crops and hops. It is a plain group of buildings abutting on the lock of the Worcester and Birmingham Canal on the one side, and an arm of the canal basin on the other. The manufactory covers an area about 300 feet in length: the buildings occupy the sides, and leave an open yard in the middle. The premises have been erected from the plans and under the superintendence of the manager, Mr. Thomas Flewett, C.E. The edges of the lead in the construction of the large chamber and the various leaden vessels, were joined by a jet of hydrogen gas, in combustion, blown between the surfaces of the two pieces of lead about to be united: the surfaces are melted by the heat, and, whilst in a fluid state, are forcibly and firmly joined together. The operation is exceedingly simple. The hydrogen gas is generated in a small portable box, and is conveyed to the point desired by a flexible tube and a small glass nipple. The atmospheric air by which it is driven into the aperture is supplied in a similar way from a pair of bellows, worked by the foot of the operator. By means of this apparatus, according to the *Chronicle*, about 70*l.* were saved in the construction of the large chamber alone.

Bristol.—The Board of Subscribers to the Bristol Royal Infirmary have resolved to open a subscription for the erection of lecture-rooms, a museum, convalescent day-room, and a chapel at the infirmary, the whole on plans already prepared, and at a cost of 2,000*l.*

Chester.—St. Paul's national schools, Boughton, approach completion. Two school-rooms have been built to accommodate 100 boys and 80 girls respectively, with a house for the master. Mr. Penson was the architect, and the site of ground, valued at 100*l.* was given by Mr. John Churton. The estimated cost of building the rooms, boundary walls, &c. is 1,304*l.* of which 250*l.* remain to be provided for.

Hemsworth.—The guardians of the Hemsworth Union are about to erect a workhouse, and plans, prepared by Messrs. Weightman, Hadfield, and Goldie, for that purpose, have been sealed by the Poor-Law Commissioners: the works will be commenced so soon as the necessary preliminaries are arranged. The buildings will be of brick, in a plain and inexpensive style.

COMPETITIONS.

Egham Burial-ground.—The plans sent in by architects for selection by the Burial Board of the proposed chapels, &c. have been on view during the week, in the large room of the Literary Institution. Some few of them have been prepared especially for the occasion which has called them forth, but many of them have done the State good service in other places. The plans having been reduced to six, the Board, after mature consideration, selected the one having for a distinctive mark a double ring in red ink. The architect, however, had omitted to furnish his name, and the chairman was ultimately instructed to adopt the necessary measures to obtain a clue to it.

Female Penitentiary, Midland Counties.—Designs have been submitted by Messrs. Bateman, Yeoville, T. Naden, jun. and Holmes, all of Birmingham. The buildings are to supply accommodation for fifty inmates, with provision for extension, if necessary, and the cost is not to exceed 4,000*l.* According to the *Journal*, Mr. Bateman's design is semi-Tudor in style, the material employed brick, with stone facings to the doors and windows in front. Mr. Yeoville furnishes two perspective views, one in the Elizabethan and the other in the Italian style. The elevation is of red brick, slightly relieved with white brick, stone being only used to the principal entrance, and where brick cannot be satisfactorily worked up. Mr. Naden exhibits a design in the Italian style. The material is brick, with stone dressings. Mr. Holmes's plan is in plain Italian, having a pediment in the centre and at each end of the front: the material used is brick, with Bath stone facings.

Sheffield New Hospital.—The committee have selected four, viz. "M.D.;" "Venienti occurrite morbo;" "Cavendo tutus;" and "Rara fides, No. 3." The general committee met on Thursday forenoon; and, having received the report of the sub-committee, and further examined the four plans, the first ballot reduced the four to three; the second reduced the three to two: on the third ballot the two were equal; but on the fourth there were five votes for "Cavendo tutus," and three for "Rara fides." The unopened letters were then referred to, and the first was found to be the design of Mr. Manning, of London; and the second that of Messrs. Flockton and Son, of Sheffield.

Trinity Church, Edinburgh.—With reference to

a note in our last, as to the authorship of designs mentioned with "special commendation," by the committee, we now state, at the request of the architects themselves, that the design marked "*L'Espérance*" is by Messrs. Haswell and Johnson, of North Shields; "Auld Langsyne," Mr. George Simmonds, London; "Knox," Messrs. Oliver and Lamb, Newcastle-upon-Tyne.

Brecon Cemetery.—The Burial Board of St. John and St. Mary, for the town of Brecon, have awarded the first prize to the design "Sit præmium primo," the author of which is Mr. H. J. Paull, of Cardiff. The work is to be carried out under his superintendence.

SCOTLAND.

Edinburgh.—Sir Benjamin Hall, before he quitted the post of Chief Commissioner of Works, directed that the old fountain of Linlithgow Palace, erected in the time of James II., and which is celebrated for having run with wine on high festive occasions, be restored to its pristine form; to be placed in front of Holyrood Palace.——The foundation-stone of the new Music Class-room in Park-place has been laid by the Lord Provost in the presence of the magistrates and council, the professor of music, and other professors of the university, all in their robes of office. It is to be of the Italian Palatial style, after designs by Mr. Cousin, city architect.——The renovation of the Assembly Rooms is now all but completed. The chief elements in the new decorations are painting and gilding, and an alteration in the mural ornamentation of the rooms. In the side walls the flutings and capitals of the pilasters, as well as the lines indicating the panellings, have all been gilded; while the intervening wall-spaces have been painted a delicate salmon-colour, which throws into relief the gold-leafing. But the most prominent alteration, perhaps, is the distribution and addition to the mirrors. The painting and gilding have been executed by Messrs Lithgow and Purdie.

Glasgow.—A new first-class graving dock and floating basin have been completed for Messrs. Tod and M'Gregor, at Meadowside. There are also four spacious wharfs, with cranes for lifting seventy tons weight of machinery, boilers, &c.; premises for working in wood and iron, fitted up with all requisite machinery and apparatus, &c. The graving dock is 500 feet long within the gates, 56 feet wide at the entrance, and with a draught of water of 17 feet at ordinary spring-tides, 15 feet at neap-tides, and 10 feet at ordinary low water. The pumping machinery is of 200 horse-power, and clears the dock of water in two hours.

Wigtown.—At a meeting of the committee for the erection of the Martyrs' monument, the tenders for completing the building were opened, when James Brown, mason, Wigtown, was preferred, and the work accordingly let to him for 127*l.*; the building to be on the Windyhill.

STAINED GLASS.

Ipswich.—In the restoration of St. Lawrence Church the stone work of the window at the east end has been filled in with stained glass by Mr. Charles Gibbs, of London. The tracery of the window consists of sixty compartments. The four top spandril pieces have a text inserted. The figures of angels follow in the other spandril pieces, holding musical instruments. The other parts are surrounded with sacred symbols, and the whole is worked on a back ground of red and blue, with foliage of various tints. The lower portion of the window is divided into five openings or compartments, from 9 feet to 10 feet high. These contain five large subjects from the life of our Lord; the Birth, Baptism, Crucifixion, Resurrection, and Ascension. On the top of the left and right hand openings above the subjects are two kneeling figures of angels, each holding a label, with text. At the bottom of all there are two accompanying figures of angels, also holding a text. Over the centre subject of the Crucifixion are two angels in the act of ascending with a celestial crown. Immediately beneath is introduced the Paschal Lamb, holding the flag of victory. Above and below the other two subjects of the Baptism and Resurrection are the emblems of the four Evangelists, with red and blue background of various tints; and the whole is surrounded with borders. At the bottom of the window is an obituary inscription.

Hartington.—The east window of Hartington Church, Derbyshire, has been restored and filled with stained glass by Mr. Wilmshurst, in memory of the late Mr. John Sleigh, and at the cost of his sons. The five lights contain respectively the Nativity, the Flight into Egypt, the Crucifixion, the Three Marys at the Tomb, and the Resurrection, within medallions, the background being of floriated coloured glass on a blue or red ground, with a variously-coloured border. Beneath these are represented the emblems of the Evangelists and *Agnus Dei*. The tracery is filled with Angels, the Pelican, the Hind of St. Giles, the patron saint of the church, the Serpent at the foot of the Cross, and other emblems. This church is approaching complete restoration under the care of Mr. H. Currey, of London.

Whitworth.—Messrs. Edmundson and Sons, of Manchester, have just completed a large stained glass memorial chancel window for Whitworth parish church, near Rochdale. The window consists of five lights, with tracery, of the Perpendicular period. The centre subject is Christ teaching humility, with text. In the four side lights are the Evangelists with their respective emblems, and each light is surmounted by a canopy. Below are the following smaller subjects, each with an appropriate text;—The agony in the garden, the last supper, the bearing of the cross, the crucifixion, and the entombment. The tracery contains the resurrection, the ascension, the descent of the Holy Ghost, &c. The window is the gift of Messrs. Rawstron, of Manchester.

Heaton Mersey.—Messrs. Edmundson have recently put up a window of geometrical design, at the expense of the Bishop of Manchester, in the nave of the church of St. John the Baptist, Heaton Mersey. The window bears the arms of the see of Manchester. His lordship has given an order for a similar one for the chancel.

Malton.—The old Norman church of St. Michael, Malton, now in course of restoration, has received an entirely new chancel, the windows of which are to be memorial windows of stained glass. The centre light of the east window will be presented by the Rev. Mr. Cleaver; the side lights by Mr. W. C. Copperthwaite, and Mr. H. Jackson. The north window and the two south windows are given respectively by Mr. H. Smithson, Mr. W. Taylor, and Mr. J. Rutter, Malton.

CHURCH-BUILDING NEWS.

Taunton.—It has at last been decided, it seems, to pull down the tower of St. Mary's church, and to erect a new one on its site. Tenders for erecting the work have been delivered to the churchwardens of the parish. Much to the surprise of the inhabitants generally, says the *Sherborne Journal*, it is reported the execution of the work will be undertaken for less than 6,000*l.*

Pitcombe (*Somerset*).—Pitcombe Church, near Bruton, Somerset, has been rebuilt and enlarged at the cost of Mr. H. Hobhouse, of Hadspen, from designs furnished by Mr. G. E. Street, in the Early Decorated style. The fittings and wood floors are of English oak. The carved bench-ends to nave seats are copied from the old ones, of which a few are retained. The chancel is paved with Minton's tiles, and the reredos from the same was the gift of the Rev. H. Taylor, the Incumbent. The east window is filled with stained glass, by Mr. O'Connor, in three lights,—the "Virgin and Child," the "Crucifixion," and "St. Mary Magdalene;" with "St. Leonard under the "Crucifixion," and the "Agnus Dei" in the traced cinque-foil above. The church has been restored, *i. e.* rebuilt (except the tower), as a memorial to the late wife and father of the beforementioned Mr. H. Hobhouse. Mr. James Howes was the sole contractor. The joiner's work was executed by Mr. Norris, of London; the wood-carving by Mr. Chapman, of Oxford; and the stone-carving by Mr. Clarke, of Wells.

Worcester.—The works at the new cemetery have been making progress. The greater portion of the site on the west side (where there is a brook) will be enclosed with a stone wall of blue lias, and surmounted by a coping of Pennant stone from Bristol. A large part of this wall has already been raised as high as the surface of the ground, and the ultimate height is to be 9 feet. On the side abutting on the road from Worcester there will be a 3 feet 8 inch wall and coping, with ornamental iron palisading of an ecclesiastical character. The iron-work, and the entrance-gates, are being cast at Messrs. Hardy and Padmore's foundry. The gateway will consist of a central and two side arches. The foundations of one of the lodges have been laid, and some progress made in setting out the principal roads. With regard to the chapels, the walls are already elevated nearly to the roofs, and the cloister walls connecting the chapels with the central tower are nearly as high. The stone-work and tracery of the smaller windows have been inserted. The carpentering work is forward, the roofs being ready to put on. They are of red deal, which will be stained. The dressings are of Derbyshire stone. About eighty men are engaged on the buildings and grounds. Mr. H. Lucy is the clerk of the works. Messrs. Chambers and Hilton, of Birmingham, are the contractors for the building; and Mr. Fuller Coker, of Ware, Herts, for laying out the grounds, drainage, &c.

Bromsgrove.—The parish church renovation has been commenced by the removal of the pews, flooring, and all the galleries but that in the south aisle. The plaster and lath of the flat ceiling have been removed, and the timbers of the roof exposed to view. The tower has a west window, which now lights the nave uninterruptedly. The alterations have disclosed in the pier of the chancel arch a portion of a geometrical staircase, which, no doubt, communicated formerly with a rood loft. The old reredos in the chancel has been removed, and, as it had blocked up a large portion of the east window, the change has produced a very marked difference in the appearance of the interior. A fenestella, containing a piscina, and an arch supported by small columns, are built in the wall, on which a table of commandments is painted, but some portion of the table has been destroyed by the insertion of the piscina into the wall. It appears that the galleries blocked up the windows in the aisles so much that churchwardens of bygone days determined upon enlarging the aisle windows by lengthening them. This was done in some cases by cutting out the tracery and the arches, and carrying up the window as high as it could be carried. Iron rods in the new work took the place of mullions and tracery of stone, and a more barbarous job, it would seem, was never perpetrated upon a respectable old church than this. It is said that one of the churchwardens of that day was an ironmonger, and that he thus illustrated the old proverb that there is "nothing like leather."

Ufton.—After undergoing a thorough renovation, Ufton Church has been re-opened. The whole of the interior of the edifice, which is calculated to hold about 350 persons, has been swept away, and in lieu of high pews are substituted oak seats of a plain character. The pulpit is ornamented with carved panelling and new oak framework. The chancel and communion flooring has been newly filled up with ornamental Minton tiles; and various other improvements have been introduced, the whole carried out by Mr. W. Ballard, of Leamington.

Aberavon.—The plans and specifications for the new church of Aberavon having been examined, the tender of Mr. Thomas Williams, Cross-y-Ceilog, near Newport, Monmouthshire, was accepted for 2,000*l.* The building will be commenced forthwith.

Montrose.—A year has elapsed since the destruction of St. Peter's Episcopal Chapel by fire. Several circumstances delayed the commencement of the new edifice until the beginning of December, but such progress has since been made, according to the local *Review*, that the main building is about ready for the roof. The new chapel occupies a larger area than the former, and will be more commodious. The design was furnished by Mr. Henderson, of Edinburgh, architect.

"DENARY *v.* DECIMAL."

SIR: As your paper recently contained a letter upon the "Decimal system," and the same subject has been brought forward by your correspondents at various other times, I shall be very glad if you can afford me room to make a general remark upon the subject. I do not wish to lengthen a discussion, or to begin one, which may be kept up for ever, with about the same progress at the end that it had at the beginning: I merely wish to draw attention to a point that appears to me to have been entirely overlooked.

Your correspondents, following the French idea, seem to think that the great merit of the "Decimal system" lies in division by 10, and try to show that ·5, ·25, ·125, &c. is a much better plan than ½, ¼, ⅛, &c.; because of the ease with which it effects addition, &c. This is true, but true only in one sense: on paper, that is, theoretically, division by 10 is easy enough—the pen runs off the figures as fast as thought;—but on a scale, that is, practically, this number is, next to 7, the very worst that could be chosen for division. It contains only two factors, 2 and 5. Now to divide by 2 is the most natural, the only natural, method; but to divide by 5 is simply worse than by 3, and almost as bad as by 7.

Here lies the difficulty of the system. Tell an ordinary man to separate a whole into 10 equal

parts. He begins by halving it, and there he stops: it is impossible for him to separate each of these halves into five parts. Tell him, on the other hand, to find the eighth or the sixteenth part: he does it at once: he begins by halving, and he ends by halving: the last half is the part wanted.

It is no use going against nature: everybody, civilized and uncivilized, can double and halve to any extent whatever. That addition and multiplication are more readily effected by 10, is owing to the acquired use of the Arabic notation, which is a system of integers, a system of increase: it is a *Denary* not a *Decimal* system. It would be lost labour to try to give an uneducated person a notion of decimals: the whole subject, the *point* above everything, ought never to be mentioned to him. Give him a unit, and bid him multiply it by 10: he does so, and wonders that he has to do no more. This is, in fact, the real working of the French system: it professes to be decimal and denary: it is so in construction, but in life, in daily use, it is entirely and essentially *denary*.

Let, then, a unit be taken, whether money, weight, length, or capacity, and let it be taken, not the lowest imaginable, but merely the lowest for the most extensive use: then let there be no operation but increase, whether adding by units, or multiplying by 10; and we have the most easy and most elaborate system that experience can want or ingenuity contrive. Every trade, every calling, will select its own unit, as at present, and may use its own nomenclature, as at present also; while every such table or scheme as this, being integral, will fit into one general whole, and the entire system will be nothing else than the ordinary system of notation, and will, consequently, be known as soon as the mind can get its first idea of number. JUTE.

PARTY-WALL CASE BEYOND THE LIMITS OF THE BUILDING ACT.

Harrod v. *Davy*.—In the Bloomsbury County Court, on the 17th ult. the plaintiff brought an action against the defendant for 15*l.* 18*s.* the value of half a party-wall in Milton-road, Stoke Newington, in the parish of Hornsey (which your readers will remember was, probably by accident, excluded from the Building Act). There were two counts;—for *contract*; and for *use and occupation*.

Mr. Angell, Solicitor, appeared for the plaintiff; and Mr. Joyce, instructed by Messrs. Hird and Son, for the defendant.

In the course of the opening of the plaintiff's case, the judge allowed the plaintiff to amend his declaration by adding a count *in trespass*, and it was arranged that the part of the case as to the value of the wall should altogether stand over until the conclusion of the other part.

The plaintiff was called, and stated that his wall and footings were built entirely on his own land. Had told the defendant that if he built against his (plaintiff's) wall he would have to pay for it; to which defendant replied, "All right; the firm will pay." Defendant afterwards built a half-brick wall against, and supported by, plaintiff's wall, and on its footings: he had not built against the fence-walls, but had cemented part of them over on his own (defendant's) side. Defendant had sent 14*s.* 8*d.* for the part of the fence-walls, which he had not accepted.

A surveyor produced plans and sections of the walls, showing them in contact throughout.

The defendant's case was stated by Mr. Joyce to be that he had not used the plaintiff's wall, and that the two walls were separated two inches; that the plaintiff's footings were really on the defendant's land, and that there was no contract to pay. The several plots were part of the National Freehold Land Society's estate, and the plaintiff was bound to build the one fence-wall at his own expense. The plaintiff's wall, when defendant came to build, was found so bulged and out of the perpendicular, and overhanging the defendant's land, that he was compelled to build a separate wall, which touched the bulged parts of the other wall, but in the other parts was separated two inches.

The defendant, and Mr. Harlock his bricklayer, supported this statement. Mr. E. Roberts, surveyor, was also called, and stated that he had compared the defendant's land with the plan on the lease, and found he had one inch of frontage less than he was entitled to: there was, therefore, an encroachment on the defendant's land on one side or the other. Could not swear that the plaintiff had encroached, but he drew the conclusion that the defendant's walls were all on his own ground, and plaintiff's footings an encroachment. He had not seen the footings or bulges, as the premises were finished when he surveyed them. The walls were separated two inches at the top.

On cross-examination, this witness stated that the front and back walls did not show the two-inch opening,—they were built close together, with a "straight joint." The tiles of defendant's roof were carried over the fissure to keep out the rain. He would not build a wall so thin as 4½ inches, but the one in question was not unsafe, as it was in small pieces between walls and chimney-breasts, and would stand as long as the other parts without the support of the plaintiff's wall.

In answer to the Court, Mr. Roberts said that the plaintiff's wall was not at all used by the defendant. Also, that fence-walls are excluded from the "Building Act," and there is no power to compel an adjoining owner to join in building one, or pay for it, unless built by agreement, but he considered he could not "use" it, by nailing trees against it or otherwise, without being liable.

The Judge on this gave judgment. He said that if the evidence of the last witness was *bona fide*, and he believed it to be so, he must give judgment for the defendant on all the counts, for want of jurisdiction. Mr. Roberts had measured the defendant's ground, and found a deficiency of one inch, irrespective of footings, and which, with the two inches space, made a loss of three inches, and it was a question to whom the land belonged on which the footings stood, and, as a question of title, out of the jurisdiction of this court. He would not, however, give costs, as the defendant had partly admitted his liability for the cemented walls by sending a sovereign to the plaintiff.

Judgment accordingly for the defendant, without costs.

A. B.

DECISIONS UNDER METROPOLITAN BUILDINGS ACT.

ALTERATIONS TO OLD BUILDINGS.

Donaldson, D. S., v. Todd, Builder.—This case from the district of South Kensington, came before Mr. Ingham, the magistrate at Hammersmith Police Court, and was an information laid by Mr. Donaldson, the district surveyor, against Mr. John Todd, builder, in respect of No. 5, Thurloe-place, Brompton. There was also a similar information laid against Mr. Stimpson, in respect of No. 1, of the same place, under the same circumstances. The house, No. 5, consisted of four stories, with a room in the roof, and the walls were under 50 feet in height; the roof was taken off, a square story added, and above it a curbed roof, with rooms in the same. The magistrate held that the rooms in the roof constituted it a story, making six in all, and that the aggregate height of the wall was to be measured to the top of the topmost story, which exceeded 58 feet. The information was to the effect that, inasmuch as the Act required walls from 50 to 60 feet in height, and of the length up to 30 feet, to have one story 17½ inches in thickness, and as the old basement external walls were only 14 inches thick, the builder was called upon to make them of the thickness of 17½ inches. The magistrate, however, held that, by Sec. IX. any alteration or addition was subject to the regulations of the Act only to the "extent" of such alteration or addition, and that the builder could not be called upon to alter old work. The magistrate, however, considered it a proper question to be submitted to his decision, and complimented the district surveyor for the vigilance he had shown in the matter.

*** If this decision be correct, houses, practically, may be built with walls of less thickness than is prescribed by the Act, the requirement simply being that the house should be covered in, with walls of the proper thickness for the height at that time; afterwards, taking off the roof, two or three stories may be added without rendering the walls below as strong as the Act requires walls of that height should be. If the decision be correct, there is a manifest weakness in the Act; but it does not seem to us to be correct. Section IX. says,—"Any alteration," &c. "shall, to the extent of such alteration," &c. "be subject to the regulations of this Act." In the case in question, the alteration was making a wall under 50 feet in height, into a wall above 50 feet, for which, according to the Act, a different thickness is required. On the other hand, we do not agree with the magistrate in thinking that the height of an external wall, where there is a curbed roof, is to be measured to the *top of the topmost story*: it should be measured, as it seems to us, only to the top of the wall itself.

ARCHITECTURAL PUBLICATION SOCIETY.

THE honorary secretary, Mr. Wyatt Papworth, wishes to point out to our correspondent that "any one can have the back numbers of the 'Dictionary of Architecture,' at such periods of payment as may be found convenient. The Dictionary was largely advertised (in the same way as the society to which 'R.' refers) both before and since its commencement, as well as announced by the transmission of circulars to the members of the profession and others. Your journal (see last year's volume, page 29, &c.) and other literary periodicals, have also constantly noticed the text and the illustrations on their appearance; and from them the Society, I consider, has derived more benefit than from the mere advertisements, which are, I find, seldom attended to; or from the before-mentioned circulars, now generally put, unread, into the wastepaper basket. The best result, however, has been obtained by those members who have undertaken to procure other subscribers,—a procedure which, in one case, has added at least five new names to the list within a short period; the inspection of the work having been generally more conclusive than all the advertisements, notices, or recommendations in type. The committee will be gratified to find that these notices have had the effect of drawing the attention of those who are not members of the Society to a work which, it is submitted, fills up an often declared hiatus in the architectural publications of England,—one which is sufficiently advanced to be useful for reference, and is now occasionally quoted. As you have before observed, the committee have not been supported in their labours to half the extent anticipated, nor have the promoters yet been assisted in their energies to effect the proposal of supplying to the profession generally so great a desideratum."

LONDON CROSSINGS.—Amongst our letters on this subject is one by "C. J. F." re-urging the formation of light iron bridges, such as connect the two sides of railways at stations. Our correspondent also remarks that Temple-bar would form a capital crossing, though an ugly one; and that he has often been detained there for some minutes in attempting to cross. At times this crossing is certainly somewhat dangerous, like too many of our London crossings.

Books Received.

The Beautiful in Nature, Art, and Life. By ANDREW JAMES SYMINGTON. In two Volumes. London: Longman and Co. 1857.

BEAUTY, says Mr. Symington, is "the result of the free operation of the positive laws which govern the mind of man and outward nature." We have no intention just now to enter on the vexed question which involves the true and proper definition of the meaning of the word "Beauty," as applied to nature, art, or life; otherwise we might stumble at this threshold of Mr. Symington's work (a threshold, by the by, which does not obtrude upon one's notice on the way in, to the author's very interesting art-exhibition, since it only modestly appears on our way out, at the close of the second volume). A very readable and valuable work on what is deemed beautiful in nature, art, and even life, however, may be written by one whose definition of the term may not appear to be very exhaustive, precise, or satisfactory. Mr. Symington's work, moreover, is only intended as a contribution, suggestive, he hopes, in the right direction, of the way by which to enter the great temple of the universe through "the gate which is called Beautiful;" and to show that, in all its beauties and its excellencies, it is built on one mighty plan (of co-relation and contrast). He believes that a system of comparative anatomy, as it were, pervades the whole universe of matter and mind, with harmonious relations for its positive laws; and he wishes to give us a glimpse of his own meanderings through this world of beauties, not expecting that *his* will be regarded as the *only* or the *best* route, nor requiring that it be followed out as such, but simply as jottings of one way at least through the Beautiful Gate—the one with which he happens to be best acquainted; and, perhaps, suggestive of a better.

In his introductory chapter the author chiefly dwells on the spirit and aim of inquiry, and of what he regards as the catholic manner in which it ought to be conducted;—wandering over the notes, as it were, and striking a few desultory chords in the way of prelude.

Then comes a disquisition on the philosophy of the Beautiful, in which the author briefly glances at mental philosophy in general, as preparatory to the understanding of various statements and theories regarding beauty in particular; and at education and acquaintance with the works of those mighty ones whose feet "echo through the corridors of time," as the best means for enlarging our sympathies, and consequently widening the visible and actual field of the beautiful.

In the division titled "The Beautiful in Nature" a threefold view of nature is considered; namely, its outward aspect,—the scientific arrangement of its phenomena,—and its special adaptation for illustrating thought. On this last portion the author has dwelt at considerable length, giving numerous quotations from early and modern writers, but more especially from three exemplary sources,—the Bible, the works of Shakspeare, and those of Wordsworth.

The next division,—"The Beautiful in Art,"—treats of the artist and of the fine arts in general; their sympathies and analogies; then of the various arts—architecture, sculpture, painting, poetry, music,—*seriatim*; also furnishing hints regarding the formation and cultivation of taste.

The last division treats of "the Beautiful in Life," the "beauty of holiness," and the "perfection of beauty," with its "crown of rejoicing" in "whatsoever things are lovely" as "the lily-work on the top of the pillars."

"In a range so extensive," truthfully and modestly remarks the author, "much of necessity can only be fragmentary and imperfectly indicated, and more must be altogether passed by; whilst errors of various kinds will creep in, notwithstanding our every care to guard against them."

The book shows a large amount of reading, and a kindly appreciation of the works of others.

VARIORUM.

Two very useful little books for the young have been lately published, one by Dean and Son, of Ludgate-hill, and the other by Longman and Co. of Paternoster-row; the former being "Jamie's Questions," by Emma Davenport, inscribed to Lady Davenport; and the latter, on "The Arts of Life" (by Dr. Aikin),—a new edition, with additions and alterations, by Lucy Aikin. None know so well how to reduce knowledge to the capacities of the young as the educated woman—

their best home teacher; and the two ladies just named appear to be well versed in these becoming accomplishments. The first of the two little volumes is intended rather to excite the curiosity of an intelligent child than fully to enter into any of the subjects proposed. The latter is in the form of letters to a schoolboy, on the providing of food, clothing, and shelter; the last named being an elementary—of course, a very elementary—treatise on architecture.

Miscellanea.

THE NATIONAL GALLERY QUESTION.—In the first of a projected series of "Tracts upon National Promotion of Art and Science" (Longman and Co. publishers), it is proposed that the National Gallery difficulties be solved at a cost of 80,000*l.* instead of 1,000,000*l.*, by retaining the pictures of the ancient masters in Trafalgar-square, removing the schools and exhibitions of the Royal Academy, consolidating the Vernon and Turner with the Sheepshanks pictures at Brompton, and circulating superfluous pictures in the provinces. The necessity of giving up Marlborough-house to the Prince of Wales in about a twelvemonth renders this, it is thought, a fitting time to make such a re-arrangement. A vote of 60,000*l.* to the Royal Academy constitutes a portion of the 80,000*l.* required. The formation of the Sheepshanks Gallery, it is thought, shows how to form a cheap shelter for the remainder of our modern pictures, with the smaller moiety, alongside of it, thus concentrating the gallery of modern pictures at Brompton, and leaving a sufficiency of room at Trafalgar-square for the gallery of ancient works. The question whether the public will visit the collection if concentrated so far west as Brompton is conceived to be already settled by the fact that, while the number of visitors to the Vernon and Turner Pictures at Marlborough-house for the whole twelve months of the year 1856 was only 227,720, and at Trafalgar-square only 208,270, no less than 230,000 visited the Sheepshanks collection at Brompton in the *six* months included between the 22nd of June and the middle of December of the same year.

OXFORD ARCHITECTURAL SOCIETY.—A meeting of this society was held on February 25. A paper was read by Mr. Markham J. Thorpe, of Saint Edmund-hall, entitled "Holyrood, in connection with Mary Queen of Scots." Mr. Thorpe's connection with her Majesty's State Paper-office, enabled him to give some interesting information. It appeared that the intended murder of Riccio was not unknown to English statesmen. Mr. Thorpe defended John Knox against the statements of the late Mr. Tytler in his history, according to whom Knox was implicated in this deed. After some further remarks from Mr. Thorpe, who was assured of the false nature of the calumnies against Queen Mary, the meeting was adjourned till Thursday, the 11th of March.

LIVERPOOL LABOURERS' DWELLING COMPANY.—The ordinary half-yearly meeting of the shareholders of this company was held last week. The attendance was not numerous. The secretary read the report. The chairman said it seemed the cost of their buildings was 6,360*l.*; the gross income, if all were let, would be 495*l.* 19s.: the actual receipts amounted to 330*l.* 0s. 1d. The report stated that their buildings were only ready for occupation in June. Still, notwithstanding, they were able to pay a dividend of 3½ per cent.; and they hoped, with an improved state of trade, their houses would be all let, and that the dividend they originally contemplated—5 per cent.—or something like it, would be paid to the proprietors. The report was adopted.

TRIBUTE TO MR. LILWALL.—It is proposed to present a tribute to Mr. Lilwall, who, for nearly twenty years has been labouring in the general early-closing and half-holiday movements. An influential committee has been formed.

ARTIFICIAL LIGHT FOR PHOTOGRAPHIC PURPOSES.—The following composition for this very desirable aid to photography is recommended by M. Gaudin:—Chlorate of potass twelve parts, sulphur three parts, sugar one part: these ingredients must be in fine powder. This composition, when lighted, is placed in the focus of a parabolic or elliptic reflector, and the sitter or printing-frame in a suitable position for receiving the reflected rays. The elliptic reflector is for portraits, and should be 6 feet in diameter: the light should be in one focus of the mirror, and the sitter in the other. The parabolic reflector for printing on dry collodion should be about 12 inches in diameter, and have a focus about 16 inches in front of it. An exposure of one second is said to be generally sufficient.

TRAJAN'S COLUMN.—DR. BRUCE'S LECTURES.—At the Literary and Philosophical Society, Newcastle, Dr. Bruce has delivered his two lectures on Trajan's Column at Rome. Dr. Bruce exhibited photographs and engravings of the sculpture, and also plaster casts, lent to him for his lectures by Mr. W. B. Scott, Master of the Government School of Art in Newcastle. "Dr. Bruce, who has a perfect pictorial copy of the sculptures, from beginning to end," says the *Gateshead Observer*, "discoursed upon them with great enthusiasm, and paid the Romans several compliments at the cost of some of our countrymen employed in the Crimea. Perchance, however, if the file of the *Acta Diurna*, the *Times* of Rome, were at our elbow, we might find therein the letters of some Gulielmus H. Russellius, hitting a blot or two in the Dacian war not recorded on the Trajan column. We think it possible also that we should meet with incidental allusion to this marvellous monument, at variance with some of the conjectures on which the doctor, in the absence of written records, was driven. For instance:—The absence of spears from the hands of the warriors, explained by a suggestion of sculptural difficulties. We think we might learn that spears were not absent, but existed in bronze or other metal. They have disappeared, as monumental 'brasses' have disappeared, and, we dare say, for the same reason."

STEREOSCOPIC VIEWS OF THE "LEVIATHAN."—Messrs. Robert Howlett and George Downes, of New Bond-street, have published a number of views for the stereoscope of the *Leviathan*,—that marvellous specimen of mechanical skill and human daring. These include a side view, showing the cradles, a very perfect photograph; a view of the stern; a view showing the paddle-wheel and part of the check tackle; a view on the deck; and a view of the pumps for the hydraulic rams, with a group of the men, the most effective of them all. These slides form a very interesting record of the early stages of a great undertaking.

THE WATT INSTITUTION AND SCHOOL OF ARTS, EDINBURGH.—From the annual report of the directors of this institution, for 1857, it appears that its efficiency is fully maintained. The total number of students during the year was 539, being four less, however, than in the previous session; but the number of tickets to separate courses of lectures was 866, or 41 more than those of last year. This school has been 36 years in operation: the attendance during the last ten years has been very considerably greater than during any previous period of equal extent; so that it has never been impaired in its success, but has been slowly but steadily increasing to the present time.

EMPLOYMENT FOR GIRLS.—Adverting to our recent article on this subject, the *Stockport Advertiser* says;—"The *Builder*, in an article upon the employment of girls and women, suggests that they should be taught to make toys; and he quotes an example of the successful teaching of a limited number of them by an earnest-minded woman. The suggestions may be worth consideration. Women are now employed in London to a considerable extent in wood-cutting, as illustrations for the pictorial newspapers. What should hinder them carving children's toys in wood? We may find many sources of employment for females such as they do not follow; but whatever is done for the daughters of working men, will come back again with interest. We do not say there is religion in serving at table, but there is a certain amount of morality in performing those duties of life which pertain to the personal feelings of one's self or another, in an appropriate manner."

ROTHERHITHE.—A warehouse of large size, for Government stores, is about to be erected at Rotherhithe, under the direction of Capt. Fowke, R.E. The probable cost will not be far short of a quarter of a million.

DRAWING MOULDINGS.—Can you inform me whether there exists any simple and inexpensive instrument by means of which to read off, record, and register, as it were, the section of a moulding, or group of mouldings? I should think that such an instrument must have been used by those who have made such accurate measurements and drawings of ancient buildings in Greece. If there be such a thing, it would be very serviceable in the process of "scribing cabinets, bookcases, &c., to the mouldings of skirtings and dados, which, as at present practised, is a very tedious process."

A CABINET-MAKER.

*** There is such an instrument: it was invented by Professor Willis; but it cannot be described as either "simple" or "inexpensive."

GAS.—The Liverpool United Gas Light Company have agreed to reduce the price of their gas 3d. per thousand feet. The charge will now be 3s. 9d. per thousand cubic feet (4s. 3d. in the out-townships).——The Wolverhampton Gas Company have declared a dividend of 10 per cent. clear of income-tax, being the highest rate of interest the law allows them to divide, liquidating the expenses of wear and tear of old plant, and supplying new, out of the revenue. The dividend will amount in all to about 3,450*l.* besides which about 630*l.* have been added to the reserve fund, making it about 2,000*l.*——The South Shields Gas Company have declared a dividend at the rate of 6¼ per cent. clear of income-tax.

SUB-CONTRACTORS: BEEDLE V. STREET.—We have received a letter from the plaintiff in this case, in reply to the communication in the *Builder* of the 20th, signed "C. Foster, Architect," (page 133,) asserting that it was distinctly understood, as to some of the extra works and the repairs, "both by the defendant and his surveyor, that it was not to interfere with Messrs. Ring and Stanger,"—in other words, that it was understood Street was to pay Beedle, and not the builder for whom Beedle was working. This is assertion against assertion, and not for us to weigh. The principle involved is important, and the right and wrong tolerably clear.

METROPOLITAN IMPROVEMENTS.—The vestries of St. Martin's-in-the-Fields and St. James's, Westminster (says a correspondent), are about to submit to the Metropolitan Board and the Chief Commissioner of Public Works a plan, suggested by Mr. Birch, architect, for widening Coventry-street in a line with Piccadilly, and forming therefrom an approach to the Strand. The proposal is to form a street crossing diagonally the lower part of Leicester-square, through Green-street and Hemming's-row, in a line with King William-street, Strand. The want of a direct thoroughfare in this locality is of long standing.

BOURNEMOUTH.—Mr. Philip Brannon, the author of the "Bournemouth Guide," in a third edition, and separately in a tract quoting from it, calls attention to the capabilities of this picturesque and healthful vicinity, and offers some suggestions as to the preservation and improvement of its beauties. In particular he strenuously advises its building proprietors not to erect villa or other residences without the aid of professional architects, some recent erections by no means contributing to the *éclat* of previous designs in connection with the beauty of the locality. It is the educated and refined who are likely to be induced to visit such a retreat, or to reside in it permanently, and it behoves those interested in the place to have a care how they obtrude ugly structures amongst its romantic heights and ravines, and so lessen its present *prestige*.

SURVEYOR OF OVER DARWEN.—The election of a surveyor for Over Darwen was made on Monday, the 22nd of February. There were forty-two candidates, three out of which number were selected to be voted for. One was then withdrawn; and the final result went in favour of Mr. Rigby, of Chorley, leaving Mr. Baldwin Latham, C.E. of Nantwich, in a minority of one. The Board came to a unanimous resolution to present a testimonial to Mr. Baldwin Latham, for the able manner in which he had passed his examination, and the great skill displayed in his drawings.

THE CANTELUPE MONUMENT IN ILKESTON CHURCH.—Within the last few weeks this monument has been restored at the expense of Lord De la Warr and Cantelupe, a descendant of the former lords of Ilkeston. In the restoration antiquaries have been consulted. They advised that the effigy should remain in its mutilated state, with one or two slight exceptions; but that the pediment should be restored to its original state, since sufficient remained to afford a clear indication of what it once was. The work has been done by Messrs. Lindley and Firn.

THE SOMERSET ARCHÆOLOGICAL SOCIETY.—The fourth *conversazione* for the season of this society was held at the Museum, in Taunton, last week, when the Rev. J. M. Cox read a paper on "the Topography of Naples," in continuation of one read at a previous meeting. Mons. Babin, professor of languages, read a paper on "the Antiquities of Nismes."

THE UNPAVED CROSSINGS IN HYDE-PARK, &c.

SIR,—The Commissioners of the Woods and Forests would, by causing to be laid down asphalte pavements in Hyde-park, and in the principal or centre Mall of St. James's-park, and in the Green-park, confer a great boon on the public. Such pavements would not interfere with the very few reviews of the household cavalry in Hyde-park.—J. B. N.

"GREY MINIUM" FOR COATING METALS.—A new coating for the preservation of iron or other metals from oxidation, has been patented by Messrs. Dodd and Co. of Newcastle-upon-Tyne. In their circular they describe it as possessing various properties, entitling it to be used in preference to the usual coatings. Experience must decide; but certainly there is reason for the endeavour to obtain some better protection, as for iron railings, &c. than the red paint in common use. The "Grey Minium," as it is called, is said to give a dark olive-coloured lustrous surface, glazing the metal with a tenacious and compact coating, which quickly dries. It is also recommended for painting on wood, for coating the interior of boilers, to obviate incrustation, and also as a cement for gas, water, or steam, pipes.

[ADVERTISEMENT.]

154, Regent-street, and 8, Beak-street,
34, Rue de Rivoli, Paris,
June 10th, 1857.

GENTLEMEN,—We have much pleasure in informing you that your Patent Revolving Shutters, which have been used in our premises for the last five years, give us the greatest satisfaction.

One of the Shutters closes a window of 30 feet wide and 10 feet high, and weighs upwards of a ton.

Yours respectfully,
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TENDERS.

For the Foleshill workhouse. Mr. Edward Holmes, architect. Quantities supplied by Messrs. Batstone and Hunt, Westminster:—

Orchard, Banbury	£5,500	0	0
Clifford, Birmingham	5,275	0	0
Clark and Son, Warwick	5,190	0	0
Mountford, Birmingham	5,128	0	0
Webb and Son, Birmingham	4,955	0	0
Roberts, Coventry	4,900	0	0
Oldham, Leamington	4,854	0	0
Matthews, Birmingham	4,819	2	0
Spencer, Atherstone	4,829	0	0
Dutton, Coventry	4,730	0	0
Fox, Atherstone	4,729	0	0
Broadbent, Leicester	4,684	0	0
Chambers and Hilton, Birmingham	4,600	0	0
Harold, Hinckley	4,418	0	0
Hardwick, Birmingham	4,093	0	0
Young, Lincoln	3,998	0	0
Ferguson, Nottingham	3,948	0	0
Price, Coventry (accepted)	3,820	0	0

For Belper new cemetery chapels, lodge, boundary-wall, and gates. Mr. Edward Holmes, architect. Quantities supplied by Messrs. Batstone and Hunt:—

Redfern, Derby	£3,943	15	5
Edward Thompson, Derby	2,900	0	0
Ferguson and Allen, Nottingham	2,889	0	0
Humphries, Derby	2,820	0	0
Robinson, Derby	2,799	0	0
Palmer, Lowdham	2,738	0	0
George Thompson, Derby	2,685	0	0
Young, Lincoln	2,550	0	0
Freeman, Belper (accepted)	2,495	0	0

For chapel and dining-hall, Norfolk Lunatic Asylum, at Thorpe, near Norwich. Mr. John Brown, county surveyor. Quantities supplied by Mr. John Ellis, Norwich:—

Norfor, Yarmouth	£4,360	0	0
Bennett, Lynn	4,190	0	0
Ling and Balls, Norwich	4,173	3	0
Worman, Norwich	4,119	0	0
Lacey, J. W. Norwich	3,972	0	0
Minns and Foyson, Norwich (accepted)	3,915	0	0

For national schools and residence to be built at Bicester, Oxon:—

Messrs. Orchard, Banbury	£1,761	0	0
Thomas Abingdon	1,698	0	0
Young and Co. Oxford	1,695	0	0
Cooper, Aylesbury	1,534	0	0
Selby, Oxford	1,500	0	0
Bartlett, Witney	1,475	0	0
Munday, Buckingham	1,095	0	0

For two houses, Triangle, Hackney, for Mr. T. Rock. Mr. Fras. G. Widdows, architect. Quantities supplied:—

Rivett	£1,550	0	0
Sergeant	1,450	0	0
Norris	1,397	0	0
Dove	1,357	0	0
Raby	1,257	0	0
Roberts	1,235	0	0

For the erection of canteen, at the Hut Barracks, Brompton, Kent. Quantities supplied. Mr. Frederick Peck, architect:—

Wilkins	£882	0	0
Cotton	792	0	0
Kirk and Parry	757	0	0
Naylar	735	0	0
Foord and Son	725	0	0
Stump	699	0	0

For rebuilding house, No. 29½, Hart-street, Spitalfields. Mr. Woodthorpe, architect:—

Brown and Robinson	£697	0	0
Brass and Sons	697	0	0
Larke and Son	674	0	0
Gammon	653	0	0
Turner and Sons	638	0	0
Pritchard	571	0	0

For Baptist chapel, Redhill, near Reigate:—

Thornton	£676	0	0
Barnes	636	0	0
Caruthers	627	0	0
Fisher	596	0	0

For new road, banks, fences, and bridge in the parishes of Sturminster, Lidlinch, and Fifehead, in the county of Dorset. Messrs. Haggett and Pocklington, architects:—

Blandford, Blandford	£605	0	0
Humphries, Upway, Weymouth	405	0	0
Jesty and Son, Broadway, Weymouth	394	8	9
Fish, Sturminster	373	16	9

For repairs to two houses, Nos. 219 and 221, Blackfriars-road. Mr. John Whichcord, architect:—

Macey	£400	0	0
Colls and Co.	357	0	0
Greenwood	349	10	0
Piper	312	0	0
Woodrough	311	10	0
Evans	278	0	0

SEWERS AT CHELTENHAM.—Sir: A note in the *Builder* of last Saturday, on the subject of "Extension of Sewers at Cheltenham," appears so expressed as to invite further explanation upon the matter referred to. Our borough surveyor (Mr. Dangerfield) is absent for a few days, and therefore, as one of the commissioners, I trouble you with a few lines. I also send you a portion of the *Cheltenham Examiner*, of February 10th, which gives a just account of the proceedings of the town commissioners with regard to the tenders for the new sewers; and I beg to inform you that the amounts therein stated as showing the several tenders are correctly given, and that Mr. Pigott's tender really was 26,500*l.* as reported in the newspaper and stated by you. To satisfy myself fully, and to place the matter beyond all doubt, I have requested the clerk to show me the actual tender signed by Mr. Pigott, and I find that the amount stated above is quite correct, and you have this my full authority for any statement you may wish to make to that effect. I know nothing of Mr. Pigott, and only wish the matter to be fairly stated to all parties, and in regard to allowing persons to alter or amend tenders after they have been delivered and opened, I think it is obviously unfair, and therefore I objected (as you may see in the paper) to Messrs. Rees and Co. being allowed to do so.
D. J. HUMPHRIS.

PUTNEY NEW CHURCH.—We are asked to say that Messrs. Aviss and Son's tender was accepted.

TO CORRESPONDENTS.

E. M. (the statement was altogether erroneous. Dundalk [R.C.] church would accommodate, very closely packed, about 3,000 persons, and Waterford about 4,000).—H. and P. (*one* of the firm should be named to act as surveyor. The signature of the firm would probably not invalidate the original notice, but we should mislead by advising without knowledge of all the steps in the case).—R. M. M.—J. P.—R. A. A.—Messrs. J.—P. C.—J. T.—J. G.—J. C.—O. C. A.—H. K.—Ripley.—G. D. P.—A Subscriber (contract at per thousand with a brick-maker. For two cottages alone it would be scarcely worth while to make bricks).—Mr. H.—P. B.—W. S.—J. E.—S. S. T.—W. W.—J. P.—G. S.—Mr. D.—Mr. M.—J. O.—Master Mariners (doubtful).—C. A. W. (the brass at Salisbury has been mentioned several times).—E. P.—H. B.—Rev. W. J.—E. H.—J. F.—S. H.—C. B.

In type, "Round Towers of Ireland," "Chloride," "A Flea for the Beautiful," "Bottle-necked Thoroughfares."

"BOOKS AND ADDRESSES."—We are forced to decline pointing out books or finding addresses.

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ADVERTISEMENTS.

DURING MARCH, the SOUTH KENSINGTON MUSEUM will be OPEN daily until FIVE, p.m.—After 1st APRIL, until SIX, p.m.
By order of the Committee of Council on Education.

On Thursday next will be published, in One Volume, royal 8vo. illustrated with Twenty-four Lithographic Engravings,
THE RESOURCES of ESTATES: A Treatise on the Agricultural Improvement and General Management of Landed Property.
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THE FREEMASONS' MAGAZINE and MASONIC MIRROR for MARCH 3rd, 1858, is now ready. Price Sixpence.

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VI.—CORRESPONDENCE.

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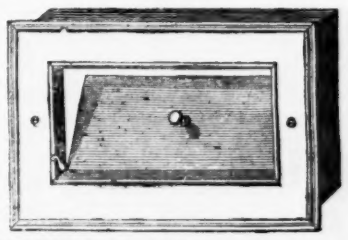

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THE ROYAL POLYTECHNIC.—Patron, H.R.H. the Prince Consort.—The Great Solar Eclipses of 1858, next Monday, Wednesday, and Friday Mornings, at Three, and Evenings at a Quarter to Eight. Entire new Lecture by J. H. Pepper, Esq. Illustrated by correct, splendid, and new Dissolving Pictures, showing the grand phenomena of a Total Solar Eclipse. Mr. G. A. Cooper's New Musical and Pictorial Entertainment, entitled "A Visit to the Egyptian Court of the Crystal Palace," with splendid Photographs and Buffo Songs, every Tuesday, Thursday, and Saturday Evening, at a Quarter past Eight. All the other Lectures, on the "Leviathan," "The Scuttle of Coals from the Pit to the Fireside," and on "The Giant Hydro-Electric Machine," with the much-admired Dissolving Views, illustrating the Rebellion in India, as usual. Admission to the whole, 1*s.* Children under Ten, and Schools, Half-price.—For the Hours of Lectures, &c. see programme for the week, which is sent anywhere for two postage-stamps.

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March 2, 1858. G. W. HEISCH, Secretary.

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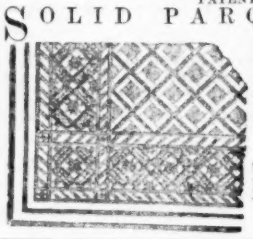

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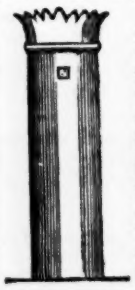

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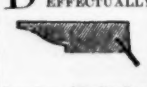

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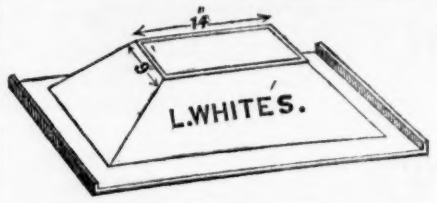

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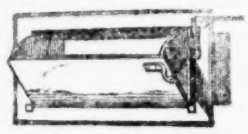

Sheringham's Ventilator for the admission of Pure Air through an EXTERNAL WALL.
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These Ventilators are arranged that the requisite quantity of air may be admitted for the due ventilation of an apartment without the slightest draught being felt by the occupants; and as they are placed in the external wall, their action is not impeded when the house is closed for the evening, at which time a constant supply of fresh air is most required.—HAYWARD, BROTHERS, sole Manufacturers, 196, Blackfriars-road, and 117, Union-street, Borough; and of all respectable Ironmongers, Builders, &c.

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